ABSTRACT OF

# The Bradshaw Lecture

ON

# THE PLEURÆ: PLEURAL EFFUSION AND ITS TREATMENT.

*Delivered at the Royal College of Physicians of London on Nov. 5th, 1907,*

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[AFTER a few preliminary remarks, in which he paid a graceful compliment to Sir Douglas Powell, referring to the President's own work on the physics and diseases of the chest, Sir James Barr proceeded :—]

Diseases of the pleuræ and pleural effusion have engaged my attention for years and I think I may fairly claim to have taken some part in the recent advancement in their treatment. It would be absolutely impossible to do adequate justice to such an important theme in the course of one lecture, so I shall content myself with some practical points which I hope will give you something to think about. Perhaps I should first consider the significance which I attach to the word practical, as different values are certainly associated with it. Personally, I think every problem worthy of our attention should be probed to the bottom and in my experience the so-called practical men are often the greatest bunglers, while the theoretical physician is the best practitioner; I am therefore anxious to link myself with the latter, however much I may weary you with details, and no matter how unnecessary or impractical these details may be considered. As you yourself, Sir, have rightly said,[1] "It would be impossible truly to comprehend the manifold incidents and conditions of asthma, emphysema, pleuritic effusion, and pneumothorax without a working knowledge of those statical and dynamical conditions of respiration in health," and therefore I need offer no apology for following such a lead. I must again quote from your expressive language[2]: "When we regard the position and connexions of the pleura, its extensive endothelial surface, the conditions of negative pressure in which that extended surface is ever maintained, its richness in lymphatics (indeed, the pleural cavities have, with other sacs of the kind, been regarded as lymphatic spaces), we cannot wonder that it should frequently become the seat of disease, nor that it should be one of the chosen sites for the manifestations of lesions from blood contamination. Few are the autopsies after adult age in which one fails to find some imperfections in the pleura, few are the cases of septic or pyæmic poisoning in which this membrane is not actively involved." In addition to its rich supply of lymphatics the pleura is a fairly blood-vascular membrane which becomes very evident during an attack of pleuritis. The blood-vessels are distributed in the subserous layers. The arteries belong to the systemic system and are innervated by the sympathetic nerves. The pleura pulmonalis is supplied by the bronchial arteries and the pleura parietalis receives its supply from the internal mammary and the intercostal arteries. The return current is carried away by the azygos veins. The valves in these veins are very imperfect and hence when there is high venous pressure in the right auricle and venæ cavæ, such as arises in tricuspid stenosis, the pressure is transmitted back to the venous radicles in the pleura and you are apt to get pleural effusion; this is especially likely to occur if at the same time there be a fall in the arterial pressure. The innervation renders the vessels very susceptible to the influence of adrenalin, and of course you are all aware of the use which I have made of this drug in the treatment of serous effusions.

In health there is a slight negative pressure in the pleura owing to the elasticity of the lungs, which even in expiration are in a state of elastic tension and therefore exert traction on the thoracic walls and, as you, Sir, have pointed out, there is a tendency for the thoracic walls to recoil in the opposite direction. I propose to enter rather fully into this subject, as it is, in my opinion, of much more importance in the treatment of pleurisy than a good many of the drugs in the Pharmacopœia. The following is copied from Starling's article in Schäfer's "Physiology" :—

> We have already seen that, even in conditions of expiration, the lungs are still in a stretched condition, and therefore exert a pull on the thoracic walls, until they are allowed to collapse by puncture of the wall. The amount of this elastic force has been measured by connecting a mercurial manometer with the trachea in the dead body and then puncturing the thorax. Measured in this way it amounts to between 2 and 5 mm. Hg. According to Donders, however, this is less than the actual pressure in the living body, owing to a loss of elasticity by the lungs. Donders calculated the elastic pull of the lungs in the expiratory condition as about 7·5 mm. Hg. After an ordinary inspiration this is increased to 9 mm., and after the deepest possible inspiration to about 30 mm. It is evident that these figures also represent the negative pressure in the thoracic cavity under the same conditions.
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> During ordinary respiratory movements there are slight changes of pressure in the alveoli and tracheal air. In inspiration the pressure in the trachea is from − 2 to − 3 mm. Hg; in expiration about + 2 mm. Hg. By connecting the closed trachea or air passages with a manometer we may measure the total possible force exerted by the respiratory muscles in drawing air in, or expelling air from, the lungs. These pressures amount to − 30 to − 74 mm. Hg in inspiration, and to from about + 62 to + 100 mm. Hg in expiration (Donders).

This is all very well as far as it goes, but in my opinion there are many little refinements necessary when making such observations in the human being. A good many of the recorded pressures would depend on the amount of obstruction to the inflow and outflow of air through the tube in the trachea. The method which I adopt can be practised by anyone on himself without having a tube tied in his trachea. What is required is a little intelligent practice so as to convert the mouth, the nares, and the intrapulmonary cavity into one aerial space, having as nearly as possible the same pressure throughout. When taking the pressure in the cavity during oral breathing the mouth is open and the shut nares connected with a manometer. When the pressure is taken during nasal breathing one or both nostrils are open and the tube of the manometer lies in the shut mouth. In the observations it is absolutely essential that all respiratory movements be performed by the thorax alone, and that the mouth and nares be held in absolute repose. Any sucking or other movement by the mouth or nares destroys the uniformity of the cavity; of course, there is a second line of obstruction at the glottis, and the variations in pressure must be greater beyond the obstruction than in the mouth and nares, but this obstacle cannot readily be removed in the human subject. I give you the following observations made on myself because I can vouch for their accuracy and I think my lungs are still fairly elastic. I know many who would give a better record and many who would give a worse. These, however, will suffice for the object I have in view. The lower pressures have been made with a water manometer and the higher with a mercurial; as mercury is 13·6 times heavier than water it is easy to convert the readings into water or mercury as you prefer.

*Millimetres of Water.*

1. Quiet oral breathing, Insp. − 5 to − 8; Exp. + 3 to + 5.
2. Deep oral breathing, Insp. − 24 to − 34; Exp. + 20 to + 30.
3. Quiet nasal breathing, 2 nostrils, Insp. − 10 to − 16; Exp. + 6 to + 10.
4. Quiet nasal breathing, 1 nostril, Insp. − 16 to − 22; Exp. + 12 to + 16.
5. Deep nasal breathing, 2 nostrils, Insp. − 40 to − 60; Exp. + 30 to + 40.
6. Deep nasal breathing, 1 nostril, Insp. − 180 to − 200; Exp. + 160 to + 180.

Müller's experiment—expanding the chest after deep expiration with the mouth and nostrils closed, − 80 mm. of mercury. Valsalva's experiment—forcible expiration with the mouth and nostrils closed after deep inspiration, + 100 mm. of mercury.

If you follow the teaching of most text-books which deal with this subject you may infer that the elasticity of the lungs was a constant dragging force trying to separate the two layers of the pleura, and with such a constant force in action of even six to nine millimetres of mercury one might naturally expect to find some evidence of its existence. As a matter of fact, there is no traction but perfect equilibrium, as the elasticity of the lungs is counter-balanced by the intrapleural tension which is equal in force and opposite in direction; the former is positive and the latter negative. The elasticity of the lungs tends to separate the pleural surfaces, and the intrapleural tension, which depends on the elasticity, holds them together. When the lungs are stretched in inspiration the elasticity is increased and so

[1] Sir R. Douglas Powell, Bart.: Diseases of the Lungs and Pleuræ. Fourth edition, 1893, p. 1.

[2] Ibid., p. 93.

also is the intrapleural tension by an equal amount. In the maintenance of this intrapleural negative tension there is a factor in the elastic recoil of the chest walls which has been omitted or not clearly appreciated by physiologists, but which you, Sir, have plainly shown to exist, so "that in *quiet inspiration there is no inertia or elastic resistance of the chest walls to be overcome, but that on the contrary the thoracic elasticity is a reserve force of appreciable power constantly tending to enlarge the thorax and therefore acting in favour of inspiration.*"[3] Moreover, owing to the comparative rigidity of the chest walls and the tension of the diaphragm, the external surface of the pleura is protected from the atmospheric pressure—it is like a membrane lying on the inner surface of a metal ball—and so the two surfaces of the pleura are pressed together and both layers are pressed against the internal surface of the thoracic walls by the atmospheric pressure within the lungs.

The elasticity of the lungs and the elastic tension or recoil of the chest wall maintain a negative pressure within the pleura or an intrapleural tension, equal in amount and opposite in sign or direction to that of the elasticity of the lungs so long as there is no fluid in the pleura sufficient to overcome the elasticity, or as long as the pressure within the lungs, minus their elasticity, does not exceed the pressure of the atmosphere. Let us take Donders' figures of 7·5 millimetres of mercury or 102 millimetres of water as equivalent to the elastic pull of the lungs during the expiratory period; therefore it would require a fluid pressure all round the lung equivalent to 102 millimetres of water or a depth in the sac equal to this all-round pressure in order to abolish the elastic pull of the lung. Any further collapse of the lung would be caused by an increase in the fluid without any positive pressure in the pleura except that of the liquid. When in pleural effusion the intrapleural tension becomes positive—that is, higher than the atmosphere—the lung must be completely collapsed. If the intrapulmonary pressure exceeds that of the atmosphere by 102 millimetres of water (a condition which exists in my chest during expiration through one nostril) then the intrapleural negative tension is abolished and any further rise in the intrapulmonary pressure would keep the surfaces closely glued together so that the external layer of the pleura might be laid freely open without any risk of air entering the sac. We have seen that great intrapulmonary pressure only occurs when there is some obstruction to forcible expiration, such as using only one nostril, or in Valsalva's experiment. It therefore follows that the best way to expand a collapsed lung is to increase the intrapulmonary pressure until you have restored the elasticity of the lung and then increase the intrapleural negative tension.

Owing to these marvellous provisions of nature the two lubricated pleural surfaces can move freely over one another, but any force which separates them must be greater than the atmospheric pressure in the lungs; during inspiration this is less than the atmosphere and during expiration rather more. Moreover, the warming of the air in the lungs from 57° to 98° F. would make it expand about one-twelfth of its bulk, and this would increase the pressure in the alveoli. It thus takes at least an atmosphere (about 760 millimetres of mercury) to separate the two pleural surfaces, and when the surfaces are separated by fluid it must have been secreted at a greater pressure than the atmosphere. Thus, any traction from the elasticity of the lungs can have no effect in separating the two pleural surfaces, but any effect is transferred to the walls of the thorax seeing that there is often a difference of pressure on the two sides of the thorax. In the intact chest you never could lower the intrapulmonary pressure sufficiently to separate the two pleural surfaces, but in Müller's experiment you can lower the intrapulmonary pressure sufficiently to make its dragging effect readily felt on the walls of the thorax. If you attach the smooth surface of a worn sixpence with a little vaseline to the bottom of a metal piston of a syringe the sixpence can be easily moved about over the flat surface of the piston, but even when the nozzle is down and the sixpence only suspended by the lubricant (the object of which is to get rid of the air between the piston and the sixpence), you can draw the piston up to the top of the syringe with the nozzle blocked, and thus make a large, though imperfect, vacuum without detaching the sixpence. You can thus see that the elasticity of the lungs is nature's method for keeping the two lubricated surfaces close together and enabling them to move freely on one another and not for separating them, as is often supposed.

Sir William Macewen, in his Cavendish lecture on Some Points in the Surgery of the Lung,[4] says: "Experience shows that the lung is maintained in full expansion by the molecular cohesion existing between the two serous surfaces of the pleura, and the capillary attraction exerted by a thin layer of serous fluid existing between the two moist membranes. Although this molecular force may not be considerable at any given point in the pleura, yet, when it is remembered that it is distributed over the entire surface of the periphery of the lungs, its cumulative effect is very great and amply sufficient for the purpose," &c. "Molecular cohesion is usually illustrated by the phenomena shown when two sheets of bright polished glass are brought into intimate contact; they cohere, and the truer the surfaces the more perfect the cohesion. Not only do they hold one another together against the action of gravity but in addition they sustain a considerable weight. This must be attributed to a reciprocal action between the two surfaces and can have nothing to do with atmospheric pressure, as the experiment succeeds in a vacuum. When, however, the surfaces of the glass are moistened and they are pressed together the cohesion becomes more perfect and the resistance to separation much greater. If, instead of using water, the surfaces were covered with some fluid whose surface tension was better adapted for the purpose the cohesion would become still greater."

In the first place I should like to add my meed of praise to this excellent lecture. It is the best paper on the subject I have ever read. His surgery is excellent and, whatever be the forces at work, he recognises the necessity of keeping the two pleural surfaces in close apposition. Where he sticks to facts there is no ground for complaint but when he wanders from the region of fact into that of theory we must not allow even this great authority to stand between us and the truth. He has got a very faint conception of what molecular cohesion really means and his illustrations have nothing whatever to do with molecular cohesion but are merely examples of surface tension and atmospheric pressure. The first essential for molecular cohesion is that the molecules must be in contact and it is absolutely impossible for such contact to take place between two surfaces which are separated by a thin layer of fluid.

[Sir James Barr amplified his argument on this point and then proceeded to consider what force holds the surfaces together in these words:—]

I have made a good many experiments on surface tension and on the effects of atmospheric pressure, but I shall only trouble you with a few which bear on the subject which we are discussing. The surface tension of a serous effusion having a specific gravity of 1025 will support about six grains to the square inch. A transudate of a specific gravity of 1010 will support about three grains to the square inch, while the normal thin serous fluid of the pleural cavity may be an excellent lubricating material, but its surface tension will not support more than two grains to the square inch; therefore, as a force in holding the two pleural surfaces together it is scarcely worth computing.

I have referred to the experiment of the sixpence attached with a little vaseline to the bottom of the metal piston of a syringe. The same event occurred when I substituted a quarter-ounce weight and half-ounce weight, but when I used an ounce and a two-ounce weight each of them dropped off when the vacuum exceeded a certain degree. The cohesion does not continue when the influence of gravity exceeds the atmospheric pressure plus the surface tension in the partial vacuum. To further test the force of the atmospheric pressure in holding surfaces together I used different metal weights and finally took a 56 pound weight, coated one of its rough surfaces with a layer of vaseline, and then laid on this a polished bookshelf; I then struck the bookshelf so as to drive out the excess of vaseline and bring the two surfaces as closely together as possible. I steadily raised the bookshelf and the 56 pounds remained attached, and I thus carried it round the room. I next interposed a sheet of paper coated on both sides with vaseline between the weight and the bookshelf, and still the 56 pounds remained attached while it was thus carried about. In these experiments the two surfaces could be moved easily over one another. I do not suppose that anyone will imagine that the surface tension of vaseline is capable of supporting 56 pounds, but to clear up any doubt

[3] Ibid., p. 10.

[4] Brit. Med. Jour., July 7th, 1906.

in the matter I shall tell you of an experiment which, so far as I am aware, has never been carried out. Take a block of marble of 1000 pounds weight having a perfectly smooth, polished surface of about one square foot in area—the under surface must be rough—and rest on a hard irregular surface so that a column of air may be below the greater part of the under surface. On the smooth upper surface spread about an ounce of vaseline, then apply a strong, rigid, perfectly smooth metal plate of rather more than a square foot in size; strike the metal plate with a sledge hammer so as to bring the two surfaces into close apposition; then slowly and steadily raise the metal plate with a pulley and the block of marble will follow it. If anything will show the force of the atmospheric pressure this should. You may ask me how I know that this experiment will succeed? I know that the atmospheric pressure is about 15 pounds to the square inch, and if you only oppose that with a weight of 7 pounds to the square inch you leave a good margin for the success of the experiment.

In punctured wounds of the thorax the pleural surfaces are often not separated. The writer on intrapleural tension in Clifford Allbutt's "System of Medicine" says: "Where the wound is a small one and only a puncture, though the lung be injured, the air as a rule does not find access to the pleura, but crosses the pleura and reaches the subcutaneous tissue. The reason of this is very difficult to find, but of the fact there is no doubt." I do not know if any of you have encountered a man who was making indiscriminate use of a knife; I have, and for a short time I got the worst of the conflict. If you should meet such an individual you can deal with him as you think best, but if you find him making a lunge for your chest I would strongly advise you to let your breath out before he does it for you. In this way the knife or dagger has another inch to travel before it reaches your chest and you establish a positive pressure within your thorax which prevents the two pleural surfaces from separating. After the injury keep the wounded side as much as possible in a state of expiration and do not on any account take a deep inspiration. I know a medical man who opened both pleuræ in a patient within a few days of each other for empyemata and the patient recovered. I am afraid he did not know much about the elasticity of the lungs or he would not have shown such temerity. He thinks that the pleural surfaces were extensively adherent and thus collapse was prevented. The increased intra-pulmonary pressure during expiration tends to expand the collapsed lung and to obliterate the actual cavity.

[After describing some very interesting observations made by Mr. Arthur Edmunds[5] on a case of pneumothorax in a child when the chest was laid freely open, and also on cats, the lecturer proceeded:—]

When the air enters the pleural cavity from the lung the exit is usually not so free as the inlet, so the intrapleural tension both in inspiration and expiration becomes positive, and so the lung collapses and does not get a chance of expanding again unless the perforation heal and the air gets absorbed. After withdrawing serous fluid from the pleura I frequently produce an artificial pneumo thorax, but I am careful not to produce any positive intrapleural pressure. In cases of pleural effusion, of course, the pressure is as the depth of the liquid, but when the lung is free to float the intrapleural pressure does not become positive until the elasticity of the lung is overcome. The heart becomes somewhat displaced, as you, Sir, have pointed out, even before the pressure becomes positive, being drawn over by the greater negative pressure in the other side of the chest. Then with the further increase in the liquid the pressure becomes more and more positive and displaces the other organs. With the substitution of the fluid air for the liquid effusion you can more easily regulate the pressure. In empyema the pressure is usually higher than in simple effusions and when the tension is very high you may have the pulsations of the heart communicated to the liquid giving rise to a pulsating empyema.

We have seen how the lung is kept expanded by the negative tension within the pleura, and the greater and more active the inspiration the greater the negative pressure, but not infrequently, especially in many wasting diseases where the demand for oxygen is very great, this negative pressure may fall to a very low ebb or may disappear, so that partial atelectasis of one or both lungs, or almost complete atelectasis of one lung, is not at all uncommon. This is especially apt to occur in young flat-chested individuals. These cases are frequently overlooked because there is usually a negation of subjective chest symptoms and so the lung is often allowed to remain so long collapsed that it never completely expands, and afterwards the deficient expansion of one side of the chest is supposed to be the result of some old pleural effusion of which the patient has no recollection. When these cases are discovered in the early stages they are usually mistaken for pleural effusion—an error which is apt to remain uncorrected if an exploring needle be not inserted into the chest.

[Sir James Barr proceeded to quote some illustrative cases, showing skiagrams of two of them, and continued:—]

In exhausting diseases, when the patient has lain for a long time in one position, a partial atelectasis is apt to take place which is often mistaken for hypostatic congestion of the lung. Under fairly similar conditions a true congestion of the lung frequently takes place, but the two states are easily differentiated. In advanced cases of mitral stenosis collapse of numerous lobules in the posterior surface of both lungs is a matter of frequent occurrence. In these cases the oxidising surface is greater than that demanded by the small quantity of blood passing through the lungs. Such cases usually pass on to more or less permanent collapse with brown induration of the lungs. Apart from cases associated with mitral stenosis, atelectasis, partial or complete, when early recognised, is very amenable to treatment, but when long neglected more or less permanent damage to the lung results, just as occurs when the lung has been long collapsed by a pleural effusion. With care atelectasis is easily differentiated from pleural effusion, even when the dull percussion is absolute and the respiratory and vocal phenomena are absent. In atelectasis of one lung the affected side is smaller than the other, the ribs are closer together and more sloping, the costal angle is more acute, the diaphragm is raised, the dull percussion barely reaches the middle line in front, while the sound lung passes beyond the mesial line, the heart is either not displaced or slightly pushed over by the sound lung. Forcible rubbing of the affected side, acting through the lung reflex of Albert Abrams, causes some expansion of the lung and clears up the percussion note. This is also accomplished by forcible expiration, or better, by Valsalva's method. Everyone who has attended a case of parturition knows how a vigorous child expands the lungs, and in the treatment of atelectasis in the adult you cannot do better than imitate nature, minus the howl.

*Etiology of pleurisy.*—The question of the etiology of each particular case of pleurisy should be settled as far as possible, as it is a most important point both for treatment and prognosis. I suppose every case is due to some micro-organisms or their toxins—even those cases following injury or cold have only thus been rendered vulnerable. This also applies to those cases associated with some chronic illness, such as granular kidney, or those due to extension from the pericardium or peritoneum. The vast majority of cases are tuberculous but a considerable number are rheumatic, or due to pneumococci, streptococci, staphylococci, the bacillus coli, typhoid bacilli, the influenza bacilli, &c. Many of these organisms are readily found in the serous effusion but not so with the tubercle bacillus. It is often difficult in any given case to decide whether it is tuberculous or not. If you find any evidence of tuberculous disease in the lungs or tubercle bacilli in the sputum you may consider the question settled. Failing this direct evidence you should add a little citrate of sodium to the fluid withdrawn to prevent coagulation, then centrifuge and examine the sediment for leucocytes, tubercle bacilli, and other micro-organisms. If the case be tuberculous the cells will be mostly lymphocytes, whereas if the pleuritis be due to other micro-organisms the polymorphonuclear cells will predominate. Even in undoubted tuberculous cases you generally fail to find the tubercle bacilli and the injection of the fluid into the guinea-pig is a very slow and often an impracticable test. A blood count often assists, as in tuberculous pleurisy there is no leucocytosis, whereas in that associated with other processes there usually is. A hæmorrhagic effusion is usually associated with tuberculous or malignant disease. A specific gravity of 1018 is generally put down as the dividing line between a transudate and an exudate, but it does not always hold good as in some undoubtedly inflammatory cases I have found the specific gravity of the fluid as low as 1006.

Cases of dry pleurisy are frequently tuberculous, though not

[5] Brit. Med. Jour., Nov. 21st, 1903.

necessarily so. In such cases there is a small effusion of plastic lymph which is gelatinous in appearance and consistence, and contains a large number of cells with a relatively small amount of fibrin. This effusion quickly organises and joins the two pleural surfaces together. In tuberculous cases accompanied by effusion there is not much fibrin and even the cellular elements may be small in amount. In pneumococcal pleurisy there is usually a large amount of fibrin whether there be much fluid or not. Those cases associated with streptococci, staphylococci, and bacillus coli are frequently purulent or sero-purulent and contain a large number of cells, and in the case of the bacillus coli the fluid is very offensive. In cases of transudation the liquid contains a few endothelial cells and not much fibrin and the specific gravity is below 1018. There are many cases such as those arising in chronic Bright's disease when the effused fluid is a mixture of a transudate and an exudate. I am not going to weary you with symptomatology or diagnosis—as I shall take it for granted that you know as much about those subjects as I do—so we will now pass on to treatment.

Cases of dry pleurisy require very little treatment except some counter-irritation, a diaphoretic, a purgative, and perhaps a sedative to relieve pain, or some strapping of the chest to limit the amount of movement. I wish to take this opportunity of emphasising the principles which underlie my methods of dealing with effusions into the pleural cavities. At the present time this is the more necessary as I find that I have got a few imitators who have never seen me treat a case but who think the whole method consists in withdrawing more or less of the effused fluid and injecting a little adrenalin solution. I am not surprised when I hear that they do not attain the success which I may say almost invariably follows my efforts. In the treatment of pleural effusion the question often arises, When should you withdraw serum? This is rather an important question and one which is more easily asked than answered. You know that if the effusion be not very great it often gets absorbed after the febrile stage passes off with or without any special medication. Many devices have been advocated to hasten the absorption with more or less success. Being naturally of a conservative frame of mind I do not care for meddlesome interference with natural processes; consequently, I sometimes give nature a longer chance than is perhaps advisable. The effusion is a natural process which, if it continue till after the inflammation has subsided, lessens the risk of pleuritic adhesions. It also keeps the collapsed lung quiet, which is very desirable if there be any active tuberculosis in the lung. A very large proportion of cases of pleurisy are tuberculous and the early withdrawal of fluid causes vascular turgescence of the lung, often hastens the dissemination of the tubercle bacilli, and kills the patient. Before I began the substitution of one fluid for another by the introduction of air into the pleural cavity I was much more chary of early tapping than I am at present. I can now remove the whole of the effusion, even in tuberculous cases, at an early stage with perfect impunity. A considerable number of deaths have followed the complete withdrawal of effusion in elderly persons with rigid chest walls. The danger in such cases arises from establishing too great a negative pressure which leads to hyperæmia and œdema of both lungs; this can be obviated by the introduction of air. I now recommend the complete withdrawal of the effusion in all cases, but before any great negative pressure is established, and before the patient feels any discomfort, I stop the siphon and introduce about an equal quantity of air to the amount of fluid which I have withdrawn. I then re-establish the siphon and complete the withdrawal of the effusion. When all the liquid is withdrawn I inject four cubic centimetres of adrenalin solution (1 in 1000) diluted with eight or ten cubic centimetres of sterile normal saline solution, and if I think it necessary I introduce more sterile air so as to make the total amount equal to a half or three-fourths of the bulk of the fluid withdrawn. The larger quantity of air is introduced in tuberculous cases. By this method the patient suffers no discomfort except from the slight thrust of the trocar. I prefer the siphon to the aspirator because you can readily regulate the force of the suction, and as your tube only reaches to a receptacle on the floor practically your negative pressure never exceeds one pound to the square inch; this force is greatly exceeded by the aspirator, and the greater the negative pressure the greater the risk of secondary hyperæmia or œdema. It is an advantage to introduce a manometer in the air tube as you can thus avoid producing any positive pressure in the pleura. Of course, all aseptic precautions are taken.

[At this stage the lecturer exhibited the apparatus for this treatment.]

The adrenalin solution is introduced to contract the blood-vessels and to lessen the secretion. According to Schäfer, Elliott, Brodie, and Dixon, adrenalin only acts on unstriped muscular fibre which is innervated by the sympathetic; the pleural vessels belong to the systemic system and are thus innervated, but its effect is not very prolonged, consequently you cannot expect it to lessen the secretion for any great length of time if there be a great negative pressure in the pleura. Although I had very good success from its use before I commenced the introduction of air I soon recognised the limits of its usefulness. When you remove four or five pints of serous fluid from the pleura there is a potential or actual cavity left which cannot be filled by a drachm of any fluid. Such a cavity cannot exist in the human body with a surrounding atmospheric pressure of 15 pounds to the square inch. It is filled by (*a*) the carbonic acid gas which escapes from the serous fluid; (*b*) by the more or less expansion of the collapsed lung; (*c*) by the return of the mediastinal contents which were pushed or drawn to one side, and the further expansion of the other lung; (*d*) by increased quantity of blood in the chest; (*e*) by elevation of the diaphragm; and (*f*) by falling in of the chest wall. All these events may not suffice to fill the cavity if the amount of fluid withdrawn has been very great and the lung so collapsed and bound down that it cannot expand. In this case the negative pressure is very great and in such circumstances it would be absurd to expect adrenalin or anything else permanently to check the secretion. When the use of adrenalin is supplemented by the introduction of air the negative pressure is lessened or abolished and the lung gradually expands as the air gets absorbed. By this combined method you can operate early in any case even during the febrile stage, and in no circumstances should you allow the fluid to accumulate to such an extent as completely to collapse the lung; you should tap before the patient suffers any respiratory distress. By the removal of the effusion you often remove an enormous number of micro-organisms and by the introduction of sterile air you substitute a light innocuous fluid for a heavy and deleterious one. Dr. W. Ewart of London has recently been injecting adrenalin solution into the pleural fluid preparatory to drawing it off, and he has had good success in thus stimulating the absorption of the effused fluid.

I always like to treat the individual rather than his disease; consequently I try to avoid routine and I make such modifications in treatment as will suit each individual case. When the pleurisy is practically cured you will find plenty of scope for ingenuity in trying to restore the function of the lung to its pristine vigour. I have no time to enter into the numerous respiratory exercises which I from time to time recommend, but there is one which each of you can try on himself—the marked effect of throwing one serratus muscle into and the other out of action.

[The lecturer proceeded to discuss treatment by drugs, saying that he had not got any specifics for pleural effusion, but that there was one drug, common salt, which should as far as possible be eliminated from the diet, especially in cases of sero-fibrinous pleurisy, on account of its high osmotic equivalent. He proceeded:—]

When there is a large quantity of effused fibrin, such as occurs in pneumococcal pleurisy, decalcifying agents such as lemons, citric acid, the citrates of ammonium, potassium, and sodium may be used. However, it will be well to reserve the use of these drugs until the acute stage of the accompanying pneumonia has passed, as the lime salts are exceedingly useful in that disease. In order to hasten the solution and absorption of the effused fibrin I see no objection to the introduction of trypsin into the pleural cavity. I am engaged in investigations with reference to the limitation or prevention of pleural adhesions. With this object in view I am at present injecting into the pleural sac liquid paraffin which has a lower specific gravity but a higher surface tension than the normal lubricating fluid. The results of my observations will be given at a later date.

[Sir James Barr proceeded to give a short account of the history of the introduction of adrenalin and air into the pleural cavity. After describing the evolution of his present method of treatment he said:—]

In the *British Medical Journal* of March 19th, 1904, I published a clinical lecture on the Treatment of Serous

Effusions, in which I fully described my method and apparatus for treating effusions into all the serous cavities. At that time the idea of injecting sterilised air was quite original so far as I was concerned, and some of the leading members of the medical profession to whom I spoke on the subject had never heard of any such practice, but I afterwards found that some others, to whose writings I shall presently refer, had been in the field before me. In the *Edinburgh Medical Journal* of November, 1886, Dr. Theobald A. Palm published an account of three cases where he allowed air to be sucked into the pleural cavity after aspiration. On April 24th, 1888, M Potain communicated to the Academy of Medicine, Paris, a successful case of pyo-pneumothorax treated by the injection of sterilised air after the removal of the liquid. His object was to keep the lung compressed until the pleura-pulmonary fistula had healed and to prevent the reproduction of the liquid. In Italy several papers appeared between 1888 and 1902 on the introduction of air into the pleural cavity by Dr. G. Lava, Dr. G Cavallero, Dr. S. Riva-Rocci, and Professor Forlanini. About or before 1900 Professor Ayerza and his pupil, Dr. Bungé of Buenos Ayres, treated cases of acute and chronic tuberculous pleurisies by the abstraction of the liquid and the injection of oxygen gas. They used oxygen as a specific medication against the tubercle bacilli, but as oxygen is more readily absorbed than nitrogen in no case did the pneumothorax last longer than 14 days. Recently Professor Forlanini has advocated the treatment of pulmonary tuberculosis by the repeated introduction of oxygen gas into the pleural cavity so as to maintain an artificial pneumothorax and thus rest the lung. About a century ago a somewhat similar treatment of phthisis was carried out in Liverpool by the late Dr. Carson and Mr. Robert Bickersteth. They produced a pneumothorax by an external opening into the pleura but they soon gave over the practice. At the Société Médicale des Hôpitaux de Paris, séance du 23 Mai, 1902, M. Vaquez and M. Quiserne reported two cases of chronic pleurisy successfully treated by aspirating the liquid and injecting in each case three or four litres of sterile air. One case had been previously aspirated 12 times and the other five. In the *Gazetta Medica Italiana* of March 3rd, 1904, there appeared a communication on thoracocentesis with the introduction of sterilised air after the method of Professor Forlanini, by Dr. Antonio Pisani. He records the case of a child, aged nine years, from whom he removed 1600 cubic centimetres of fluid which had probably been in the pleura for 11 weeks. During the operation he insufflated 1000 cubic centimetres of air filtered through cotton-wool slightly impregnated with formaldehyde. At the end of the operation part of the air was removed by aspiration. In THE LANCET of Nov. 10th, 1906, there is an editorial reference to a case reported at a meeting of the Société Médicale des Hôpitaux de Paris on Oct. 12th, 1906, by M. Dufour and M. Foix. They successfully removed a large chronic pleural effusion and injected sterile air. Dr. Ewart has recently allowed filtered air in a Woulfe's bottle to be sucked in by the chest. In my original apparatus I used a large Woulfe's bottle but I drove in a measured quantity of filtered air by a falling column of sterile water of a few inches in height. This, in my opinion, was a perfect apparatus but it was too cumbersome to carry about. This systematic treatment of pleural effusion by the combined method of the complete withdrawal of the liquid and the introduction into the pleural sac of adrenalin and sterile air, which I may fairly claim to have originated, will, I hope, be more appreciated as it becomes better known. The adrenalin solution is better diluted with two or three times its bulk of normal saline solution.

*Empyema.*—This is one of those numerous diseases which the surgeons have taken under their own special care but they have done nothing to advance its treatment, I presume because physics seem to have formed no part of their education. In the case of a child with elastic chest walls you could not easily mismanage a case of empyema. A considerable number of cases get well in spite of treatment. When a surgeon has to deal with a purulent effusion in the chest about the only idea which he can get into his head is free drainage and forthwith out comes a piece of rib and in goes a large drainage-tube expecting it to suck up the liquid from the most to perhaps the least dependent part of the cavity and utterly reckless as to whether the collapsed lung ever expands again or not. Dr. Otto F. F. Grünbaum has devised a useful appliance for assisting the lung to expand in these mismanaged cases but I do not know of any surgeon who has taken it up. Mr. Arthur Edmunds, to whose valuable work I have previously referred, insists on the anæsthesia being very light when operating on an empyema, so as not to abolish the pleuro-laryngeal reflex and thus the vocal cords are enabled to play their part in maintaining the pressure within the lungs. If I were a surgeon and had to deal with such a case I would use a local anæsthetic, such as eucaine; or, if thought necessary in any particular case, light general anæsthesia as recommended by Mr. Edmunds; I would make a free incision in a very dependent spot, about the eighth or ninth intercostal space, in a line with the lower angle of the scapula. If the ribs were close together it would be well to take out a long piece of one rib and then make a free incision into the pleura. An assistant should firmly compress the side so as to drive the purulent matter out and allow as little air as possible to enter the chest during the operation. A strip of gauze may be inserted in the wound to keep it open, but no tube should be introduced. I would then apply a large piece of sterile oiled silk over the wound to act as a valve, so as to allow the fluid to escape and no air to enter. Large aseptic dressings should be applied over the valve. The affected side may be well strapped to prevent movement. I would make the patient lie on or towards the affected side, so as to lessen movement and encourage drainage, prevent him taking any deep inspirations, and tell him to make deep nasal expirations, so as to expand the affected lung and drive the purulent matter out of the pleural cavity. He should be instructed to inspire through the mouth and to expire through the nose. I would also make him frequently practise the Valsalva method or blow through a small tube. If the pus be very offensive or not draining well the patient can be treated in a continuous bath and then no dressings will be required.

In these cases the pus is usually fairly liquid, is neutral or may even be slightly acid in reaction, contains some peptone and a ferment which seems to have the power of digesting fibrin, and thus the lung is not likely to be irreparably collapsed or bound down by adhesions; there is, therefore, a fair chance of success if the operation be adopted early and after-treatment intelligently carried out. The variety of micro organisms in the pus should be ascertained, and an appropriate vaccine, after the method of Sir A. E. Wright, should be used. Even the stinking empyemata from the bacillus coli often do very well. Tuberculous cases are the most troublesome and usually when the fluid becomes purulent there is a mixed infection. Cases of pyo-pneumothorax are best treated by drawing off the fluid and filling the cavity with sterile air or oxygen. Where the empyema is loculated the surgeon may remove a piece of the rib if he chooses; he cannot do much harm. Unfortunately, Estlander's operation is often necessary, partly owing to early mismanagement of the cases. There must be some effort made to place the treatment of this disease on a more scientific basis than that on which it at present stands.

I have spoken strongly about the surgeons because I feel strongly, and I am anxious that they should remove this blur from their fair escutcheon. The old wheeze about the physicians not handing the cases over soon enough is now played out. There is still, however, plenty of work for the physicians; prevention is better than cure, and I think in the future their work should lie more and more in that direction. Our aim should be to protect the individual from the ravages of disease and the onslaught of the surgeon, and make the very existence of that individual less and less of a necessity.

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AN EXTRAORDINARY AND FATAL ACCIDENT.—Much sympathy with his relatives and friends was felt in Plymouth at the death of Mr. Vining Gedney Joseph Paul, which occurred at Dovercourt, Essex, on Nov. 1st, from the result of an accident. Mr. Paul had been rabbit shooting with some friends and the guns were placed in a motor-car in readiness for the return journey. By some oversight one of the guns was left loaded and at full cock and just as Mr. Paul was stepping into the car a dog jumped in and touched the trigger. The charge entered Mr. Paul's body, passing through the left lung, and he died a few hours later. Mr. Paul was the son of the late Mr. J. M. Paul of Plymouth; he studied medicine at St. Mary's Hospital and qualified L.R.C.P. Lond. and M.R.C.S. Eng in 1905. He was for some time assistant house surgeon at the Taunton and Somerset Hospital and left there a few months ago to commence practice at Dovercourt. He was only 28 years of age.

# An Address
ON
# SOME OF THE ADVANCES OF MODERN MEDICINE.

*Delivered before the Leamington Medical Society on Oct. 19th, 1907,*

BY SIR RICHARD DOUGLAS POWELL, BART., K.C.V.O., M.D. LOND.,
PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON; PHYSICIAN IN ORDINARY TO THE KING.

MR. PRESIDENT AND GENTLEMEN,—I trust I shall be pardoned if I deal with this somewhat large subject rather in a clinical than in a formal manner in the address which you have honoured me by asking me to deliver. Since the last Royal Commission on Vivisection in 1876 almost the whole system of therapeutics has been overhauled, much of it submitted to the test of experiment, and many new and valuable remedies revealed to us. Attention has been drawn by Professor Cushny in his evidence before the Royal Commission now sitting to the importance of standardisation of drugs, and no physician can fail to be aware of the great need there is of attaching some standard value of strength to medicines in current use.

But perhaps the greatest advance in modern medicine which will make the last third of the nineteenth century ever memorable has been the discovery of bacterial agencies as the essential etiological factors in inflammation, suppuration, and in the causation and spread of all specific diseases. We cannot get away from the ubiquitous application of this scientific truth, which plays a governing part, directly and indirectly, in all our medical and surgical doings. The fermentation researches of the great Pasteur, upon which this discovery was based, found their first application in commerce; many millions have been reaped, many noble estates built up, and some noble families even founded upon the researches of Pasteur on the conversion of sugar into alcohol by bacterial agency. Untold thousands of lives have been saved, many millions of hours of suffering (human and animal) have been spared, and a corresponding increment of earnings from human effort has been gained by the antiseptic and aseptic treatment of surgical wounds and injuries established through the profound researches and strenuous advocacy of Lord Lister. The world has indeed been the richer for the work of these philosophers, themselves enriched by no patent stamps or pecuniary royalties to detract from the honours that are theirs.

At the time of the last inquiry of a Royal Commission on Vivisection (1876) not one disease was known to have a bacterial origin. Now almost every acute specific disease has its recognised etiological factor in a bacterium or a protozoon the natural history of which has been worked out. Enormous saving of human and animal life through preventive medicine has thus ensued and biological science becomes an essential adjunct to physiology. But if you come nearer, into proximate therapeutics, and consider the treatment, for instance, of gastro-intestinal affections, of oral, throat, bronchial, and ear diseases, of the catarrh of measles, or the ulceration of scarlet fever and diphtheria, you find the application of antiseptic and aseptic measures, which began in surgery, more and more in use in medicine. Perhaps scarcely yet enough so. In many acute and chronic diseases, such as pneumonia, typhoid fever, pulmonary tuberculosis, and gastric affections, the sanitation of the mouth is still often insufficiently attended to.

Again, look to the modern treatment of consumption: what is it? what are the principles that underlie it? Consumption is a disease which is in a sense rightly spoken of as beginning with the reception of the tubercle bacillus; but how often it is that a filth catarrh precedes or is associated with the lodgment of the specific bacillus. How is it that a man may safely, in a sanatorium, minister to the needs of many consumptive invalids each one of whom, it is assumed, has acquired his disease by infection? Is it not true, does not experience at least point to its being so, that tubercle is a distributed infection rendered increasingly virulent as it is mingled with the other attendants of dust and dirt and diminishing to the vanishing point in clean and aseptic surroundings? The main destructive lesions of phthisis are from bacterial admixtures other than tuberculous—pneumococcal, streptococcal, and staphylococcal. Brouissais, according to his lights, rightly spoke of them as inflammatory; the principal objective of open-air treatment is to starve out these adventitious infections, deprived of which tubercle tends to heal. And up to recent times, after the formidable germicidal treatment that one witnessed in the early days of Koch's discovery had subsided, the treatment in sanatoriums has consisted exclusively of fresh aseptic air, rest, and feeding. But are we to advance no further? Surely we want treatment as well as conditions, and I think that antiseptic remedies properly used are still valuable. Unquestionably of late more is being done, and the researches of Sir A. E. Wright into the nature of the means of combating bacterial poisons by the phagocytic agency of the blood have led to the discovery of opsonic qualities in the blood serum which have a bactericidal action selectively against tubercle and other bacteria, an action that has a standard of potency which is liable to depression under conditions of ill-health and which can be raised by appropriate vaccines. This opsonic property of the blood serum reacts in a measurable manner to minute doses of the poison against which it is specific and admits of being gradually raised against tubercle by the influence of tuberculin inoculations, or against other bacteria by the injection of minute doses of their sterilised cultures. Under careful supervision, guarded by expert observations of the opsonic index at short intervals, I have seen tuberculin employed with advantage in cases in which the adjuvant infections have been cleared away, and in a few instances the employment similarly of antistreptococcal vaccines has proved useful. But so far as I have observed, it is useless and undesirable to employ tuberculin treatment in the stormy periods of active tissue destruction and severe hectic of tuberculosis, since these phenomena are mainly due to secondary or associated infections and must first be combated by rest and antiseptic measures. A similar line of preventive and curative treatment has been employed in other diseases, notably in plague and enteric fever. Antitoxin remedies in diphtheria, tetanus, and snake poisoning are also modern developments based on bacterial research, which have already effected much.

Beside the science of bacteriology, which deals more especially with the organisms of plant life, an allied science of Protozoology (of which Professor Minchin is the first professor in the University of London) has arisen within the last quarter of a century and has already elucidated the etiology of malaria, Texas fever in cattle, tsetse fly disease, sleeping sickness, kala-azar; and through the labours of Laveran, Manson, Bruce, Smith and Kilborne, Leonard Rogers, and others, the biology of the parasitic protozoa has been found fully as interesting and important as that of their bacterial analogues. Hamlet observes: "A man may fish with a worm that have eat of a king and eat of the fish that hath fed of that worm" to show "how a king may go a progress through the guts of a beggar," but what squalid prose is this beside the romantic story of the vicissitudes of the malarial parasite!

I would glance at the effects of establishing collateral circulation and of relieving vascular tension in modern medicine. The same principle underlay the old derivative therapeutical methods of blisters, cupping, purging, but its application is more direct, and it goes further, not only relieving the tension of a confined circulation but producing an afflux as well as an efflux of blood of collateral source, and it has become possible only with the advent of anæsthetic and antiseptic surgical methods. Perhaps I may be allowed to illustrate my remarks by the relation of a case not wanting in other points of interest. An American gentleman, 37 years of age, came to consult me in April, 1905, with the following interesting and peculiar history. At the age of 16 years he and several other members of his family took what must have been fairly heavy doses of cantharides which were administered to them by an erotic servant girl. His brother died within a short time from hæmaturia and acute Bright's disease. His mother had also acute symptoms and died 15 years later from Bright's disease. He himself was very ill with cramps, convulsions, and hæmaturia; and chronic Bright's disease developed from that date with frequent severe headaches, culminating perhaps three or four times a year in uræmic convulsions. I cannot give exact details about these attacks but his illness began with them and he had six or seven severe uræmic seizures in the

18 months preceding October, 1903. The seizures would begin with severe head pains followed by loss of consciousness and convulsions and he would have a series of these attacks recurring every fifth day. Chloroform gave relief and $\frac{1}{25}$th of a grain of morphine subcutaneously given at times of headache would sometimes ward them off. In October, 1903, failing to get relief in his own country, he came over to Europe and consulted Professor James Israel of Berlin. This gentleman in two operations (October and November, 1903, respectively) cut down upon the kidneys and stripped them of their capsules. On the right side the kidney was found contracted to about three-quarters of the normal volume by interstitial inflammation. The left kidney was the seat of pyonephritis with very little parenchyma and was reduced to one-third of its normal size. No trace of tuberculosis was found either at the surgical operation or from the examination of the urine. The patient subsequently suffered occasional retention of urine in the left kidney, causing a diminution in total urine excreted. Then severe headache occurred accompanied by convulsive twitchings in the right arm. The headache and scanty urine could both be overcome by $\frac{1}{15}$th of a grain of morphine hypodermically, if administered directly the headache appeared. The patient was put upon chiefly a vegetable and starchy diet with only a little white meat and fish and no alcohol. Warm salt baths were ordered. When the patient came under my care (April, 1905) his statement was that the operation had greatly mitigated the severity and frequency of the minor attacks and had checked altogether the major convulsive seizures. There was some slight hardening of the pulse but no degree of arterial tension or enlargement of the heart characteristic of Bright's disease. The breath was slightly ammoniacal. He had recently had influenza at Algiers in December and his temperature had been daily raised and some cough remained with a somewhat watery stained expectoration. There was impaired resonance at the right apex, with weak respiration of harsh quality, the physical signs being so slight as to give hesitation in diagnosis. The sputum, however, gave an abundance of tubercle bacilli; indeed, I never saw films yielding so near an approach to a pure culture. The urine, of specific gravity 1014, yielded 0·15 per cent. of albumin; it was cloudy and contained a large number of pus cells but no definite deposit; no casts and no tubercle bacilli were found. I may briefly say that this patient held his own for a time and died abroad in the spring of this year (three and a half years after Israel's operation) from his lung complaint, the kidney disease not having materially interfered with his comfort nor produced any increase of cardio-vascular changes.

I mention this case, which in itself is an interesting and unusual one, for two reasons: first, it is an example of a modern method of treating the uræmic stage of chronic granular kidneys which is very rational but which at the time it was instituted by Edebohls[1] in 1898 was a very bold innovation of surgery, designed to establish new vascular connexions and to influence the nutrition of the organ for the relief of what had previously been regarded as a purely medical disease; and secondly, in my student days we were impressed with the danger of touching with the knife a patient afflicted with albuminuria, but since the introduction of Listerian methods our views on these matters have entirely changed. I have met with other instructive cases in this connexion. One was that of a patient whom I had sent out to South Africa for tuberculous disease of the lungs. He did well there for a year or two and then contracted kidney disease with hæmaturia and some symptoms pointing to the probability of calculus. I did not think he had calculus as the urinary examination pointed to a more general nephritis. However, he was himself a medical man and was led to undergo surgical exploration which resulted in the exposure of a beautiful specimen of granular kidney. The capsule on that side was stripped and he suffered no harm from the operation. Another case was that of an officer in whom calculous disorganisation of the left kidney was diagnosed and the question of its removal was considered by Mr. P. J. Freyer and myself. The patient was afflicted with persistent headache and there were such manifest signs of hypertrophied heart and arterial sclerosis with high tension and the presence of renal casts in the urine that we hesitated to operate, and under complete rest and dieting he improved. He was an active sportsman, however, and directly he returned home to an active life, he had a renewal of his symptoms of fever and suppurative kidney trouble, so that finally he agreed with us to take the risks, and a disorganised left kidney was removed. Since that time, after a little treatment, his tension headaches have subsided and he has returned to much better health. In this connexion it is interesting to note a fact brought out by Edebohls, but which is certainly not generally known, that in a considerable proportion of cases of chronic Bright's disease (nearly half of a series of 18 of his cases operated upon) the disease is unilateral or mainly so. A somewhat similar operation of "omentopexy"—stitching a portion of omentum to the abdominal wall and the establishment of collateral circulation between the portal and systemic vessels—has given successful results in a good number of cases of cirrhosis of the liver and ascites. This is in accordance with the clinical experience that repeated tappings and the occurrence of perihepatitis resulting in adhesions are sometimes followed by disappearance of the ascites. I give the above cases as examples of the widening of our range of vision in regard to the symptomatology and treatment of internal diseases.

*Medicine has of late become very surgical.*—We are gradually learning how much of us we can do without—in other words, the wondrous capacity for adaptation and compensation that exists in our complex organism, how much there yet remains of the original protoplasm in our being, in spite of the differentiation through the ages of its parts into organs. We can do without a lung, a kidney, a prostate, a uterus, or ovaries. The spleen is not exactly a packing material, but it has many limitations to its usefulness. The duodenum and colon may be put out of action and converted into mere conduit tubes. The appendix we seem to be better without; it is a troublesome and dangerous survival. There is a story current that a well-known surgeon once trephined an officer after a hunting accident and deprived him of so much brain tissue that he felt the greatest uneasiness as to the consequences to his patient. He, however, met the gallant gentleman some years later on foreign service, never better in his life and in command of the intelligence department! We can suffer deprivation but we cannot endure disease. The Divine Master's exhortation, "If thine eye offend thee, pluck it out," has come to apply to many diseased organs. With deeper knowledge we recognise that no disease is local; that the so-called constitutional reactions or "sympathetic irritations" are the dissemination of real particulate or humoral poisons in the form of bacteria, cocci, or their toxins, and that besides the manifest function of which it may be deprived each organ has its long-since forgotten participation in the general body politic—it is a part of the original bioplasm—to which it contributes some internal secretion that, with its degeneracy, becomes morbid. Need I illustrate this remark by alluding to enlarged prostate, hypertrophied tonsils, unsound appendix, hæmorrhoidal disease, calculous and scrofulous kidneys, and the chain of phenomena beyond the local suffering induced, that attend each of them and are relieved by their removal?

Pursuant upon the great advances that have been made in the surgical treatment of diseases of internal organs, and especially of those of the abdomen, there come some recent observations of Lennander[2] as to the sensibility of those organs which may prove to be of great value—first, in regard to the use of anæsthetics; and secondly, in regard to the symptomatology and diagnosis of diseased conditions. Lennander in his very interesting and instructive pamphlet remarks (p. 3) that "surgical procedure and antiseptics have at the present time attained to such a stage of safety that in many cases the narcosis may be regarded as relatively the most dangerous factor in an operation." Great efforts have therefore been made to replace general anæsthesia, wholly or in part, by local anæsthesia, and an important element in effecting this is a knowledge of the relative sensitiveness of external and internal parts under the surgeon's manipulations. There are some conditions of patients as regards heart or lungs or general collapse which render general anæsthesia very dangerous, and local anæsthesia may be the only resource left. By a method known as Schleich's infiltration

[1] The Surgical Treatment of Bright's Disease, by George M. Edebohls, A.M., Professor of Diseases of Women in New York Post-Graduate Medical School, 1904. Professor Edebohls gained his first experience of the benefit of the operation in Bright's disease in the course of operating for fixation of moveable kidney associated with nephritis in 1892.

[2] On the Sensibility of the Abdomen, by K. G. Lennander, F.R.C.S. Eng., professor of surgery in Upsala, Sweden. Translated by Arthur E. Barker, F.R.C.S. Eng., professor of surgery at University College, London. 1902.

method the external tissues can be locally anæsthetised over the area required by a solution of cocaine and morphine in normal saline solution, and the incisions having been completed through the parietal peritoneum Lennander has found the bowel, gall-bladder, and other organs both on their internal and external surfaces almost insensible under such painful impressions as incision, pinching, pulling, and applications of heat and cold, provided in the manipulations the parietal peritoneum be not dragged upon, compressed, nor distended. The pneumogastric and sympathetic nerves and the organs they supply do not seem sensitive to painful impressions, and Lennander quotes instances even of inflamed visceral peritoneum being insensitive under manipulation. These observations no doubt require some confirmation in details, but as to the general fact of the insensitiveness of the internal viscera under manipulation—provided there be no dragging upon the parietes—Lennander's observations leave no room for doubt. So that by means of local anæsthesia for the primary incisions, a small injection of morphine, and general anæsthesia for short periods when from dragging pain is anticipated, operations can be done, if need be, without general anæsthesia, or at least with a comparatively small amount of it.

I am less concerned, however, in dwelling upon the importance of these observations in surgery. They are also illuminating in their application to diagnosis and they have to be borne in mind in investigating some cases of grave internal lesion, in which pain even on firm palpation may not be a prominent feature. Let me illustrate the diagnostic bearing of Lennander's observations by the relation of a case that occurred within my experience a short time ago. An elderly gentleman who had long had feeble health and for 30 years or more had had occasional attacks of hepatic colic became gravely ill with febrile symptoms, hepatic pain, some hepatic enlargement, and some tenderness over the site of the gall-bladder, for which an exploration was proposed. Whilst the question was being discussed he was seized with an attack of agonising pain, followed by symptoms of entire collapse, and he was thought to be beyond the reach of human aid. He unexpectedly rallied, however, and after a few weeks the question of surgical interference again arose. He was now sallow, not quite jaundiced, had lost much flesh, the liver was enlarged, there was fulness but no defined tumour, rather a sense of matting of organs over the region of the left lobe of the liver and the sulcus; there was laterally some extension upwards from the liver dulness. The kidneys were not quite sound. It was concluded on carefully reviewing the whole case that there was probably an abscess behind the liver from rupture of the gall-bladder. But so remarkably slight was the pain, even on firm palpation over the liver, that it was difficult to persuade the family attendant to accept the diagnosis. And indeed one could but admit that there was much uncertainty in the case. But an exploration was decided upon and a large abscess was found, for the draining of which a tube was necessary extending from the front opening to a second posterior opening. The abscess contained over a hundred gall-stones of various sizes. The patient made a good recovery. The absence of tenderness on pressure here was a grave drawback in diagnosis, which if yielded to would have resulted in the death of the patient. An experience of many cases of appendix disease will serve to illustrate the slight sensitiveness of the deep abdominal parts under conditions of grave and dangerous lesions.

I should like, lastly, to allude to some comparatively recent anatomical researches upon the heart which have a very important bearing upon the physiology of its functions, and which must greatly influence our views of certain cardiac diseases and arrhythmias. The heart muscle has an intrinsic power of rhythmic contraction, a survival of its original plasmic and later of its simple tubular construction; and here again is an instance, I take it, of what it is a part of my thesis to insist upon; the importance in medicine of the recognition of that protoplasmic basis of our organism which, thrust aside by developmental replacements, is yet never entirely exhausted. Do we not from conception to birth pass, with the rapidity comparable to a midnight dream, through the plasmic transformation of countless years which sum up our organic development. And the man at maturity may well forget the far off facts of his ancestry which were so briefly and darkly epitomised in his intra-uterine life. The rhythmic contraction of the heart proceeds along the circulatory tube from the auricle to the ventricle. Gaskell in 1883 first showed that the contraction wave travelled from the auricle to the ventricle through muscular continuity. Stanley Kent in 1893 demonstrated in the septum a definite communication between auricles and ventricles, but His actually discovered the auriculo-ventricular bundle of fibres that goes by his name. Purkinjé had in 1845 demonstrated a network of peculiar grey, flat, gelatinous-looking fibres under the endocardium of the sheep and found that they consisted of large nucleated cells in bundles separated here and there by striated muscular fibres. These go by the name of Purkinjé's fibres, and Kölliker in 1852 showed that they were superficially striated and were of modified muscular nature. Tawara, a Japanese physician, has, amongst others, recently collated these observations and has shown that the filaments of Purkinjé are the terminal ramifications of the auriculo-ventricular bundle of His and serve as a specialised musculature, connecting up the auricles and ventricles and responsible for the due conveyance of the contractile wave from the one to the other. Indeed, there seems reason to think that this bundle is responsible for initiating the impulses to contraction. This auriculo-ventricular connecting system is best seen in the sheep and calf but can be demonstrated in the human heart and in that of all mammals. It commences as a plexus (Knoten) of fibres immediately below the coronary sinus as seen in these diagrams[3] and here merges above in the auricular musculature. Extending downward as a well-defined bundle it divides above the ventricular septum into two branches, one of which passes down and is distributed to the right ventricle and papillary muscles and the other passes through an almost cartilaginous orifice to the left side of the septum to be similarly distributed to the left ventricle. The distribution is subendocardial and there is this important peculiarity, according to Professor Tawara and accepted by Professor Aschoff in a valuable preface to his work—viz., that the bundle remains isolated and does not branch until it reaches near the tip of the ventricle where it distributes branches to the papillary muscles and spreads over the whole ventricle from apex to base. The inference is that rhythmic impulses starting at the "Knoten" spread through the auricle, then pass down the longer paths to the apex of the ventricle, thence are distributed, first to the mitral and tricuspid papillary bundles starting the closure of these valves and, a fraction of a second later, the contraction of the ventricles generally.

It would be premature to enlarge upon the application of these new observations to the diagnosis and treatment of cardiac disease. It seems safe, however, to conclude that this bundle of His, which sends ramifications holding in communication the whole of the heart musculature, is a more primordial form of muscle in which the rhythmic impulses commence normally at the "Knoten"[4] as a starting point (but abnormally at other points) and spread to other parts coördinating the rhythmic action of the heart. The observations give a new precision—much wanted—to our appreciation of irregularities of the heart from degeneration, myocarditis, and poison influences of tobacco and alcohol; and even now the clinical and pathological researches of Dr. James Mackenzie[5] and Dr. Keith have gone far to explain the mechanism of intermittent heart's action, bradycardia, Stokes-Adams disease, and to suggest an explanation of syncopal angina. One must be very modest in drawing inferences from splendid work in which one has had no concern, but undoubtedly we have the promise from it of a new and discriminating significance in the application of the term myocarditis, which has been somewhat loosely used to cover the pathology of most disorders of the heart that are not valvular.

[3] See Dr. A. Keith and Mr. M. W. Flack's able paper in THE LANCET, August 11th, 1906, p. 359; also Tawara's elaborate photographs and drawings in his work, Das Reizleitungssystem des Saugetierherzens, 1906. Some dissections by Dr. R. A. Young and Professor P. Thompson were also shown.

[4] Keith and Flack would place the node of departure at a higher level, that of the superior cava.

[5] The Quarterly Journal of Medicine, vol. i., No. 1, October, 1907, p. 39.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (ALBANY MEMORIAL).—At a meeting of governors and members of this charity to be held at Queen-square, Bloomsbury, London, W.C., on Nov. 19th, at 4.30 P.M., H.R.H. the Duchess of Albany will be present and an announcement will be made in respect of the jubilee of the hospital which will occur in 1909.

# Introductory Address

ON

# FLEAS AS A NATIONAL DANGER.

*Delivered at the Opening of the Winter Session of the London School of Tropical Medicine on Oct 21st, 1907,*

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MR. CHAIRMAN, LADIES, AND GENTLEMEN,—The usual grounds upon which anyone is invited to give an opening address such as you have honoured me by asking me to deliver to-day are: that he has either distinguished himself by original investigations or that he possesses a profound knowledge of the subject upon which he is to speak. Now I am completely lacking in both these qualifications. There is, however, a third qualification—namely, that the selected individual is greatly interested in the branch of science on which he is to speak and is anxious to assist its progress; and this qualification I do possess, for I have studied for well-nigh 40 years from time to time the manifestations of malaria, one of the most important of all tropical diseases, year in and year out, and at every hour of the day and the night. There is no patient in whom a medical man takes such a profound interest as himself, and there is no patient in whom he can observe so closely the symptoms of a disease or note so accurately the effects of various conditions upon it. About the end of March, 1868, while the Suez Canal was still in process of making, I travelled one night from Suez to Ismailia on the small fresh water canal which was first made many centuries ago by one of the Pharaohs. The boat was a small one, not at all unlike a barge such as you see in canals in this country. The small cabin was crowded with people and became so hot and stuffy that I was obliged to go and lie down outside. It was a clear starlight night with not a single cloud to act as a blanket and with perfect radiation of heat into space. I do not remember ever to have felt such intense cold in my life excepting once when I had to sit for a little time on a bare rock near the top of an Alpine peak with a sharp wind blowing upon me from the glacier. For a long time I attributed the malaria from which I subsequently suffered to the chill and to a miasm which I supposed to have lain over the canal.

Four days afterwards I slept in the convent at Ramleh, about half way between Jaffa and Jerusalem, in a large, bare, whitewashed room containing about a dozen beds and without any mosquito curtains and with not a trace of a looking-glass. I had been very tired and slept soundly the whole night, but when I went to breakfast I was informed that my face was spotted all over with mosquito bites. It was only many years afterwards, however, that I attached any importance to this circumstance. A year afterwards I was studying physiological chemistry with Professor Kühne in Amsterdam who suffered at that time from periodical diarrhœa which attacked him every morning at the same hour and was not alleviated by ordinary astringents but yielded at once to the administration of quinine. Here again a malarial miasm was suspected as the cause of his illness. Previously to my cold journey on the Suez Canal I do not recollect ever having had a headache, but from that time onwards I became very subject to them and also to curious attacks of weakness, languor, and inability to work, accompanied by slight chilliness. One night a medical man came in and found me cowering over the fire. I was unable to tell him what was the matter. I had never taken my temperature before, but on taking it it turned out to be 103° F. At this time I was working with the late Sir Joseph Fayrer on the action of cobra venom, and when I told him my symptoms he at once said they were due to malaria, although I had never had any distinct rigor. Three or four years afterwards I made a tour through the north of Italy and shortly after my return I suddenly felt, at 2.30 on a Sunday afternoon, a sudden chill with well-marked rigor followed by a hot and sweating stage. This ague was remarkably punctual and the time of attack did not vary more than five minutes either way. Its rhythm was also peculiar, each alternate attack being slight. Thus on Sunday I would have a severe attack, Monday would be free, Tuesday a slight attack, Wednesday free, Thursday a severe attack, and so on. Under quinine the attacks soon ceased. About five years later, in crossing the Maremma, I seemed to get a fresh infection, the cold stage of which came on between noon and one o'clock. It was not nearly so punctual as the other; it might come on a few minutes after 12 or not until nearly one. After a short time this attack also passed off, but about a year afterwards I got a severe chill which appeared to bring back both infections so mixed up together that I constantly had alternate chills and heats at intervals during the day, and these so broke down my strength that I was obliged to leave off work for over three months. It was then that my old friend Sir Joseph Fayrer said to me, "There are two courses open to you: you can either go away for three months or you can go into your coffin. You can take your choice." I need not say which course I took and at the end of three months I completely regained my strength.

Perhaps I am describing my own case at too great length but it seems to me to illustrate a number of minor points in regard to the action of malaria which, though not very fully discussed in text-books, appear to me to be very important to the sufferer.

The occasional long latency of malaria is well known and both my attacks came on after I had left the malarial district. There is also the condition which may be termed sublatent, or perhaps better subliminal, in which my temperature rose to 103° with malaise but without any rigor. The longest duration of latency, so far as I know, has not been settled, but in one of my patients it was no less than 32 years. The patient was a man, aged 65 years, and had resided in his youth on the West Coast of Africa. One day he came to me complaining of the same sensations that he used to have in Africa when about to have fever. He had come up from the country and had been dining with friends to a greater extent than was good for him. I assured him that there was nothing the matter with him but his liver was out of order for it was full and tender. I said that no case was known of ague coming on after a complete interval of 32 years. Many cases are, of course, known where ague has come on at this distance of time from the first infection, but in all those of which I have heard there have been intermediate attacks, so that there never has been such an interval as 32 years between the attacks. It is possible, however, that in his case there may have been subliminal indications of malarial fever just as in my own case where there was the temperature of 103° without any rigor.

Another point which struck me, however, was the extraordinarily rapid onset of fever from a chill. One Sunday afternoon my wife and I went to church at Brighton and we were shown into a pew about the fifth or sixth from the door. The door was open to allow people to come in and the cold draught from it struck me on the back of the neck. In about five minutes I began to shiver and was obliged to go out with a well-marked ague fit. The parts of the body in which a chill will bring on an attack are the back of the neck, the abdomen, the shins, and the feet. A patient, who suffered from ague himself, first directed my attention to the shins and since then I have frequently observed that a chill to that part brings on malarial symptoms. Many sufferers from ague are unaware of this and by sitting between the door and the fireplace when a fire is burning in the grate they get their legs chilled by the draught and suffer accordingly. There can be little doubt, I think, that most of the symptoms are due to toxins formed by the plasmodium and these toxins have not all the same action. Some of them appear to produce almost irresistible drowsiness, so that in my own case I have actually fallen asleep between asking a question and receiving the answer. Another symptom is intense muscular weakness and languor, so that although muscular movements are possible there is the greatest reluctance to do anything and the person feels, I should say, like a man who had a dose of curare.

Another symptom that, so far as I know, has received little attention is the loss of memory which generally precedes, but sometimes follows, an attack. In my own case it has frequently preceded a rigor by two or three hours or more and this occurs in most cases where the symptom is present. In one case, however, it occurred subsequently to the rigor. This was a civil servant who consulted me because he feared he would be obliged to give up his post on account of his complete loss of memory for several hours

after an attack. In him the ague came on first during an expedition on the Niger where he and his friends had got into some kind of a shallow lake where reeds grew to a height of nine or ten feet and he and his friends had for eleven days been obliged to push their boat along while they waded breast high in the water as they could not row on account of the reeds. Another point which is little mentioned in text-books is the peculiar brown colour of the face in malaria. It is just as if a thin wash of sepia had been passed over the face. One day when going round the hospital at Lyons with my friend Professor Lépine I saw this colour very well marked in one of the patients. I accordingly asked Professor Lépine if the patient were suffering from malaria. He answered that the patient was in hospital for Bright's disease and there was no mention of malaria in the history of the case. On asking the man, however, we found that he had been a soldier in Algiers and had there suffered much from malaria. This brown colour is not always equally intense; it sometimes disappears altogether, but is likely to come on before an attack, which may sometimes be prevented by a dose of quinine being taken whenever the brown colour is noticed. And here I may say that my experience bears out the dictum of my friend the late Sir Joseph Fayrer that quinine does not exert its full action, or, indeed, may fail to act at all, if the liver is engorged, and that it is well to prepare the patient for a course of quinine by a mercurial followed by a saline.

Since I first began to suffer from malaria our ideas regarding the pathology of the disease have undergone several changes. At first it was supposed to be some kind of miasm the exact nature of which was unknown. Then it was supposed to be a bacillus and lastly it was found by Laveran to be of an animal nature.

If science had been more richly endowed in this country both the transmission of malaria by mosquitoes and the intra-corporeal and extra-corporeal life of the plasmodium might have been ascertained sooner than it was, because in 1895 Sir Patrick Manson applied to the Scientific Grants Committee of the Royal Society for a grant of £300 to enable him to go to Demerara and work out its transmission by a suctorial insect. Unfortunately, the yearly grant of the Government to the Royal Society to be distributed amongst all branches of science only amounts to £4000 in all. Applications for nearly double the amount were received and it was felt that the society could not give such a large grant as Sir Patrick Manson required. He accordingly mentioned his hypothesis to Ross who brought definite proof of the part played by mosquitoes in the transmission of disease. Very few discoveries have had such important bearings upon the possibility of life in the tropics and already it has saved very many lives and rendered residence in malarial districts almost free from danger when certain precautions are adopted. Thus in the Campagna, where nearly one-third of the railway officials used to die off every year, the mortality from ague has been almost abolished by the simple precaution of having the windows and doorways of the houses covered with mosquito-proof iron netting and taking care that the inhabitants do not go out until after a certain time after sunrise and again enter before sundown. By destroying the puddles in which mosquitoes breed or by covering the surface of the water with petroleum so that the larvæ are suffocated the numbers of mosquitoes are greatly diminished with a corresponding fall in the incidence of malaria.

Yellow fever, which was formerly so much dreaded in the Southern States of America, has now been shown to depend upon inoculation of the disease germ by a species of mosquito. It has in some districts been almost entirely stamped out by destroying mosquitoes in the same way as for malaria.

A disease which is now attracting more attention than even yellow fever is the sleeping sickness. This disease appears to have existed from time immemorial on the West Coast of Africa, but it was confined there because the various tribes were at war with one another. It was impossible for anyone to cross the continent and thus the eastern side was perfectly immune. But the stoppage of intertribal wars has produced a result that no one could have foreseen. As Colonel D Bruce, R.A.M.C., has expressed it, we have introduced the *Pax Britannica* to the districts surrounding the Lake Nyanza with the result that the population has been almost exterminated by the pestilence which the stoppage of intertribal wars and increased facilities for commerce have introduced. This disease does not, as was at first supposed, only attack the natives. It attacks white men as well, and it threatens to spread along the Nile valley and how far it may do so and with what results to the Soudan and Egypt no one knows.

The disease germ here is a trypanosome which is transferred from one infected patient to another by the glossina palpalis, very similar in appearance to the tsetse fly. When wild game are killed off the trypanosome of the tsetse disease disappears with them, but in the case of sleeping sickness the trypanosome is harboured in human bodies and so the only chance of stopping the spread of the disease is by destroying the biting fly. In order to do this a thorough investigation is required of the life-history of the fly, of the conditions which favours its propagation, and of the other insects or birds which may destroy it.

If the trypanosome which causes sleeping sickness could be destroyed by remedies not only would the patient be cured but the disease would be exterminated. Some hope that such a result may be achieved is afforded by the experiments of Moore, Nierenstein, and Todd, who consider that parasitic protozoa which show different phases in the life-history may be attacked at one phase by a drug which is entirely inert and therapeutically useless at another phase, and conversely a drug which is without action on the first phase may be specific in its action on the second phase. They find that atoxyl causes trypanosomes to disappear from the blood rapidly but that after a time new generations of trypanosomes appear which resist the action of atoxyl. When, however, a salt of mercury is administered after the trypanosomes have been removed by atoxyl a permanent cure may be effected. At present this treatment is only experimental and until an efficient method of destroying the trypanosome in man has been discovered the only plan available is to destroy the flies which convey the disease.

What is true of the glossina palpalis is true of other flies also and as ticks and bugs are likewise most important as carriers of other diseases there really ought to be established by Government a chair, or still better an institute, of scientific entomology well endowed and having attached to it a number of men who could carry on original investigations. Such a chair or institute if thoroughly well endowed and having money lavishly expended upon it would repay the expenditure a thousand-fold, for the study of tropical diseases is becoming to a great extent identified with the study of the insects which transmit them.

It is very difficult indeed to arouse people to take an interest in, and to spend money upon, objects which they think do not directly concern themselves, and although malaria and sleeping sickness are of imperial importance yet they do not directly affect the health or the well-being of the tax- or rate-payers of this country. But there is another disease which is liable almost at any time to do this—namely, the plague. Everyone knows of the terrible ravages of this disease in Europe in the fourteenth century under the name of the Black Death and again in the seventeenth century. The disease began in the East and travelled along the routes of commerce. The mortality produced was excessive and the condition of terror amongst the population was almost indescribable, "for the terror was such that brother even fled from brother, wife from husband, nay, the parent from her own child. The sick could obtain help only from the few who still obeyed the law of charity, or from hired servants who demanded extravagant wages and were fit for little else than to hand what was asked for, and to note when the patient died. Even such paid helpers were scarce and their desire of gain frequently cost them their lives. The rich passed out of the world without a single person to aid them; few had the tears of friends at their departure. The corpse was attended to the grave only by fellows hired for the purpose who would put the bier on their shoulders and hurry with it to the nearest church, where it was consigned to the tomb without any ceremony whatever and wherever there was room. With regard to the lower classes, and, indeed, in the case of many of the middle rank of life, the scenes enacted were sadder still. They fell sick by thousands, and, having no one whatever to attend them, most of them died. Some breathed their last in the streets, others shut up in their own houses when the effluvia which came from their corpses was the first intimation of their deaths. An arrangement was now made for the neighbours, assisted by such bearers as they could get, to clear the houses, and every morning to lay the bodies of the dead at their doors. Thence the corpses were carried to the grave on a bier, two or three at

a time. There was no one to follow, no one to shed tears, for things had come to such a pass that men's lives were no more thought of than those of beasts."[1] In the country the ravages were equally great and in different parts of England agricultural ground became waste as the tenants were all dead. "In other places there are no court fees, no services performed, no mills used, because all on the land are dead; houses and tenements also are in hand, and rents everywhere are reduced or are nothing at all, because some or all of those who held the lands and cottages have been swept away."[2] It may be that the days for such an evil epidemic are past and gone and owing to the spread of sanitary science we may rest secure in the belief that such plague will not again recur. But sanitary science is no use unless it is put to practical application and in India at the present moment the ravages of plague, though not so great as those of the Black Death or of the Great Plague in London, are nevertheless dreadful.

I am informed by Professor W. J. R. Simpson that during the first six months of this year no less than 1,060,000 deaths from plague occurred in India and out of these 632,000 occurred in the Punjab which has a population of only 25,000,000, that is to say, 1 in every 40 inhabitants in this district has died from plague between January and June. But because this awful mortality occurs far from home and amongst those who are our fellow subjects but belong to an alien race many people contemplate it with equanimity. There is, however, a property of the plague poison which is worthy of attention. Its virulence is capable of great increase and great decrease. At first it seems too feeble to attack man but it is able to attack small animals such as rats. By passing successively through numerous rats it becomes more and more virulent. At length it attacks man and as the epidemic proceeds the poison becomes stronger and stronger and the mortality greater and greater. After some months a decline in virulence sets in and finally it fades away.

It has long been observed that great mortality in rats is apt to precede pestilence and Mr. D'Arcy Power informs me that dancing mice, that is, I suppose, mice which were either affected by giddiness or convulsions, were looked on as a precursor of plague. My friend Mr. E. H. Hankin suggests that the well-known story of the Pied Piper of Hamelin is a legendary account of a plague epidemic. A similar explanation has been given by Mr. J. S. Mackintosh in THE LANCET of April 2nd, 1904, p. 970. The Pied Piper came from abroad and at his first visit killed off all the rats in the place, but not being paid his stipulated fee he came to the city again and killed off all the children. Major Leonard Rogers, I.M.S., tells me that in the Kamoan Hills in India a form of plague is more or less indigenous but that the natives, as soon as the rats begin to die, desert the village and run away for some months.

The connexion between mice or rats and the plague of boils which affected the Philistines after they had taken the Ark of the Covenant from Israel has been noticed by others, but I have not seen any note of the connexion between mice and the plague which destroyed the army of Sennacherib. The account of this, as given in II. Kings xix. 35, is: "And it came to pass that night, that the angel of the Lord went out, and smote in the camp of the Assyrians an hundred fourscore and five thousand: and when they arose early in the morning, behold, they were all dead corpses." But in Herodotus (II., 141) the destruction of Sennacherib's army is attributed to mice and the historian says: "And to this day the stone statue of this king stands on the Temple of Vulcan[3] with a mouse in his hand and an inscription to the following effect: 'Whoever looks on me let him revere the gods.'"

Although the connexion between mortality in rats and plague has been long observed it is only recently that its nature has been ascertained. The disease germ which occasions plague is a short, thick cocco-bacillus with rounded ends to which the name of bacillus pestis has been given. It was discovered by Kitasato and also by Yersin and numerous experiments have proved without doubt that this bacillus is the cause of the plague. But how is it conveyed from rats to men? In the case of the Black Death we read "that the disease was communicated by the sick to those in health and seemed daily to gain head and increase in violence just as fire will do by casting fresh fuel on it. The contagion was conveyed, not only by conversation with others who were sick, but also by approaching them too closely or only by merely handling their clothes or anything they had previously touched."[4] Such a description would seem to indicate that the poison might be propagated by the breath or by the touch of infected persons, but experiments did not sustain this theory and the idea was first proposed by Simonds that the real transmitters of the virus were fleas. These insects, having fed upon rats or patients infected with plague, absorbed the bacillus, which multiplies within them, and is transmitted to the next animal or person they bite. Simonds's theory explains the propagation of the disease to the healthy from infected persons or their neighbourhood. It has been supported by experiment by Gautier, Raybaud, and Dr. J. Ashburton Thompson, but some of the most convincing experiments were made by Captain W. G. Liston, I.M.S., who found that 61 per cent. of white rats and 52 per cent. of Bombay rats contracted plague from fleas which had fed upon infected rats. He then found that fleas would infect guinea-pigs. He chloroformed the animals and removed all the fleas. Some of them he put into plague houses and these contracted rat fleas. Others he put into pure houses and on examining them found that they were free from fleas. The fleas that he found on the infected animals were rat fleas, some of which contained the bacillus pestis in their stomachs, and some of the guinea-pigs used as flea traps died from the plague. He further showed that guinea-pigs did not catch plague if they were protected from fleas either by placing them in fine wire gauze cages through which fleas could not pass or by suspending them in open cages at such a height above the ground that fleas could not jump into them, or by surrounding the cage with so much tanglefoot, a kind of adhesive fly-paper, that fleas could not jump across it but were caught upon it. His experiments were confirmed and extended by the Advisory Committee appointed by the Secretary of State for India, the Royal Society, and the Lister Institute which concluded from its experiments that: 1. Close contact with infected animals does not give rise to plague epidemic among guinea-pigs when fleas are excluded, even when food and huts are extensively soiled with urine, fæces, and pus of plague-infected animals. 2. If fleas are present epidemic starts at once. 3. An epidemic may be started when no contact with plague-infected animal is allowed when fleas from infected animals are introduced. 4. Infection can take place without the animal being in contact with the ground. Thus a guinea-pig put in a wire cage and suspended two inches from the ground contracted the disease. 5. Aerial infection did not take place if the cage was two feet (that is more than fleas jump) from the ground. 6. In all the animals thus naturally infected the large proportion, 90 per cent. (nearly), of the buboes were in the neck. 179 animals were examined and in obtaining fleas from animals 65·3 per cent. were obtained from the head and neck. The committee also found that rat fleas bite human beings and it seems to be demonstrated beyond the possibility of doubt that, although in some instances, infected food may possibly produce the disease, yet fleas are the main instrument of disseminating the infection of plague and that in places where they exist in large numbers a nidus exists where plague once introduced may become more and more virulent and spreading like wildfire along railway lines may overspread the country.

The great difficulties in the way of preventive measures are ignorance and apathy, to which in some parts of India, at least, we have superadded superstition. The plan which I believe is now adopted in Hong-Kong and Bombay is to treat any house in which a dead rat is found as "plague infected" and to evacuate it and disinfect it with crude petroleum. Possibly the introduction of more cats might be useful, as Colonel Buchanan has found that where there are many cats there is little or no plague. But in order to carry out any efficient sanitary measures there must be a staff of sanitary officers and Professor Simpson suggests that sanitation should be taught in the colleges and that native men and women should be trained in hygiene. This would not only greatly aid the carrying-out of all sanitary measures but it would remove amongst many of the natives a source

[1] Boccaccio quoted by Gasquet, The Great Pestilence, p. 23. London: Simpkin, Marshall, and Co.
[2] Lipscombe's History of Buckinghamshire, quoted by Gasquet, Op. cit., p. 101.
[3] Ptah the chief of the Egyptians' gods, the Greek Hephæstus, vide section on Religion in Baedeker's Handbook to Lower Egypt.
[4] Boccaccio quoted by Gasquet, Op. cit., p. 21.

of dissatisfaction. At present the ambitious medical officers have no means of attaining high rank but in such a service as this the best men might attain a position of much importance.

In some parts of India there is a great prejudice against taking life of any kind but this is not universal because in some parts goats are offered to Kalee, the goddess of Destruction. If the Brahmins could persuade the natives that the sacrifice of a dead rat as often as possible to Kalee would avert pestilence rats would very soon be destroyed and plague would be at an end. In all probability it would be very difficult for Europeans to effect this but if we have native medical officers of high caste they might be able to do it. Such a proposal as this I have made may perhaps greatly offend the religious feelings of many good people who would not give the slightest countenance to what they look upon as a false religion. But it should be remembered that any converts who have been made by the missionaries to the Christian faith will not do this; it is only those whom the missionaries have failed to touch and when Naaman, the Syrian, after being healed of his leprosy bowed himself in the house of the heathen god Rimmon he was pardoned for doing so because it was in the discharge of his duty. (2 Kings v. 18.)

What I have already said does not directly touch the health of this country, excepting so far as an extensive plague in India affords constant opportunities for its spread along channels of commerce, and more especially along steamship routes. Cases of plague arrive from time to time at the Port of London and I am told that every now and again they also arrive from the Far East at Vancouver. Although precautions may be taken to isolate cases of plague yet rats may become infected, may creep along ropes to the shore, and there infecting other rats might begin a pestilence. This would probably remain for some time limited but by acquiring virulence like the plagues of old might spread along the railway lines to every part of the kingdom.

In Canada, from which I have just returned, forest fires are a great evil. Many of them are started by cinders from the railway locomotives. To avert the danger a broad strip is kept ploughed along either side of the railway line so that any cinders lighting upon it shall die out and no fire shall spread. What would we think of the conduct of those who instead of pursuing this course should carefully place along the railway lines dried leaves, dried hay, or inflammable stuff which would inevitably blaze up if a burning cinder were to fall upon it? We should certainly say that they were fools or worse, and yet this is very much the course we are pursuing by allowing rat- and flea-infested districts to exist in the East-end of London and Vancouver, places which are in daily danger of infection by plague.

In conclusion, I beg to return you my best thanks for the honour you have done me in asking me to deliver this address, and I must apologise for its many imperfections. Its imperfections would have been much greater had it not been for the help I have received from Sir A. E. Wright, Captain S. R. Douglas, I.M.S., Professor Simpson, and Major Leonard Rogers, I.M.S., and the assistance I have obtained from the new edition of Sir Patrick Manson's work on "Tropical Diseases," Clifford Allbutt's "System of Medicine," and Osler's "Modern Medicine." What I have said is, perhaps, to many of you, perhaps to all of you, a mere repetition of what you already know better than I do. My excuse for it is that a recrudescence of the blood poisoning by staphylococcus and streptococcus which I unfortunately contracted at St. Bartholomew's Hospital five years ago has lessened both the time and the energy which I proposed to devote to its preparation. All that I can hope for is that I may have drawn attention to what is already well known to all of you—the great need there is for the endowment of what might be called "pathological entomology," and to the fact that such minute and despised creatures as fleas may actually constitute a national danger.

ROYAL SOCIETY OF MEDICINE.—The Electro-therapeutical Section of this society will hold an exhibition of new apparatus, &c., used in connexion with electro-medical work on Friday, Dec. 13th, at the small Queen's Hall, Langham-place, London, W. Intending exhibitors should write to Dr E. Reginald Morton, honorary secretary of the section, at 22, Queen Anne-street, Cavendish-square, London, W., for all information as to the conditions of exhibition.

# A Presidential Address

ON

# THE ADVANCES IN MEDICINE DURING THE PAST THIRTY YEARS.

*Delivered at the Opening of the 135th Session of the Medical Society of London on Oct 14th, 1907,*

BY J. KINGSTON FOWLER, M.A., M.D. CANTAB., F.R.C.P. LOND.,

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[AFTER a few preliminary remarks in which Dr. Kingston Fowler supported the action of the Medical Society of London in not amalgamating with other societies into the Royal Society of Medicine, he continued:]

We of this generation are fortunate in living in a time of great progress in all branches of medicine, using that term in its widest sense. That this is such a period in regard to surgery no one will deny. That it is equally so of medicine the laity are by no means assured; indeed, many—and those by no means persons of small understanding—are frequently heard to deplore the fact that, notwithstanding the great advance of surgery during the past 30 years, medicine stands nearly where it did. I propose to ask your indulgence for an attempt to remove this too prevalent misconception.

Whatever view we may hold of the degree of importance to be attached to the opinions of laymen upon such a matter it will hardly be denied that this view, if widely held, does not tend to enhance the honour and esteem of the physician. Indeed, he is just now much beset, is on his trial, and almost needs to justify his existence.

I was lately present on an occasion when a speaker quoted those appreciative verses from the thirty-eighth chapter of Ecclesiasticus—

1. Honour a physician according to thy need of him with the honours due unto him: For verily the Lord hath created him.
2. For from the most High cometh healing; And from the king he shall receive a gift.
3. The skill of the physician shall lift up his head; And in the sight of great men he shall be admired.

I regret to state that a subsequent speaker threw doubt upon the rendering of the first verse and suggested that the more correct reading was—

For verily the Lord hath created *even* him.

I am glad to find that the revised version gives no support to this reading.

The surgeon is daily making inroads into the territories which until lately the physician considered his own, and a high authority has recently had to deny that he ever advised the public to abstain from drugs.

It was about 30 years ago that I had to decide for myself whether I should follow the path of surgery or medicine and at that date the practice of surgery presented to my mind but few attractions. Had I to make the same election now I might decide differently. I had but recently served as house surgeon to one of the foremost surgeons of the time, Sir William Fergusson, who will always be remembered with affection by those with whom he was associated. The theatre of King's College Hospital was often filled to the topmost tier with men, many of whom had come from distant lands, to see Sir William Fergusson operate, and certainly his dexterous hands were worth watching at their work and with that the visitors were well satisfied. No anxiety was shown to learn the results of those great operations; but looking back upon them in the light of our present-day knowledge one sees that they were almost appalling. Pyæmia and septicæmia were rife, suppuration of wounds was the rule, and the opening of the general cavity of the peritoneum in the course of an operation meant almost certain death to the patient. Maggots were not uncommonly found when dressings were changed and I have heard a surgeon when informed on his visit that several cases of erysipelas had appeared in his ward reply in cheery tones, "Ah, I've often known the wounds do better after erysipelas." At that time a successful ovariotomy in a general hospital was the talk of medical London.

The younger surgeons of the present day will hardly believe that at King's College Hospital the badge of the house surgeon on operating days was a bunch of ligatures worn like a flower in the button-hole of his operating coat; not a white and spotlessly clean garment as of to-day, but the oldest and dirtiest coat that he ever put on, which was hung up after use in the ante-room of the operating theatre until required on the following Saturday. Little wonder that under such conditions secondary hæmorrhage was common and often fatal and that the general mortality after operations was enormous. But we knew no better until Lister, whom the whole world now delights to honour but whose reception in London I remember but shall not describe, by applying the principles of Pasteur to the investigation of the causes of inflammation in wounds was led to discoveries which illuminated the whole field of surgical practice and rendered possible those operations which are the commonplaces of to-day. Surgery had, so to speak, but one victory to win; the triumph over sepsis laid at its feet vast territories where the knife was scarcely known and in some of which the physician had hitherto held a feeble sway. Not so with medicine, which is required to attack separately problems of infinite difficulty, presented by each disease and every organ of the body, and finds no single light which illumines every dark recess of its ignorance. Yet, as I hope to show, medicine can claim her triumphs too and stands to-day as far removed as surgery from the position occupied in 1877.

In no department has greater progress been made during that period than in that of the infectious diseases. The pathogenic organisms of most of these affections have been discovered and their cultural and other characters made known. Some of the most important have, it is true, so far eluded research, but we cannot doubt that in course of time all will be recognised. The changes and reactions that take place in the bodies of man and animals in consequence of infections have been the subject of minute study. The subject of the immunity from the effects of poisons and diseases is by no means new. Uncivilised man has been engaged for centuries in the search for agents capable of giving such protection. The problem of producing immunity against snake-venom engaged the minds of the medicine men of some of the native races of Africa long before the days of Jenner and their attempts to produce such a vaccine appear to have met with considerable success. The development of immunity which is the natural end of many infectious diseases was first artificially produced amongst civilised peoples by the inoculation of small-pox and later by means of vaccination.

To trace the various steps by which our present knowledge of immunity and serum-therapeutics has been reached is too great a task for such an occasion as this. I must content myself by a mere mention of the most epoch-marking discoveries. All have originated from Pasteur's work on fermentation, which led him to the generalisation that infectious diseases are particular fermentations and due to specific micro-organisms. This he first established with regard to anthrax, chicken cholera, and swine erysipelas. In 1878 Pasteur stated that the streptococcus was the cause of puerperal fever. In 1881 Koch discovered the bacillus of tubercle. In 1882 the Klebs-Löffler bacillus was recognised as the cause of diphtheria. In 1888-90 Roux and Yersin discovered the diphtheria toxin, and this was followed in 1890 by Behring's researches on the diphtheria antitoxin, from which discovery serum-therapeutics originated. In 1889 Kitasato isolated and cultivated the tetanus bacillus, and in the following year Behring and Kitasato showed the means by which animals can be rendered immune to the toxin which it produces. The proof given by von Behring that an antitoxic serum is capable of protecting healthy animals against fatal doses of the toxin and in curing those which are already ill from the disease was one of the greatest triumphs in science and in its application to the art of healing. It is now, however, clear that a like success in the production of immunity and in the cure of the sick cannot be expected in every infectious disease and must necessarily be governed by the nature of the pathogenic bacteria and particularly by their production of a diffusible toxin.

The discovery by Metchnikoff of phagocytosis, supplemented as it has been recently by the very important work of Sir A. E. Wright and Captain S. R. Douglas, I.M.S., on opsonins, has gone far to give a definite meaning to a term—the resisting power of the body—which in ignorance we have so long employed.

The year 1881 will always be memorable in medicine as the date of the discovery by Koch of the bacillus of tubercle, thus putting an end to the controversy which raged at the time when I was a student as to the pathology of phthisis or consumption. To those who had consistently supported the views of Laennec on the unity of phthisis it came as a confirmation of a belief long held that the disease was due to the presence in the lungs of a micro-organism responsible for lesions in nearly every organ of the body. Having a strong belief in the importance of a name I ventured at a later date to urge that we should bring our nomenclature of the disease into line with that of other tuberculous affections and it is some satisfaction to observe that the term "pulmonary tuberculosis," notwithstanding its length, has to a large extent displaced the old names. Once it was recognised as a tuberculous affection it became obvious that it should be treated on lines similar to those which had for years been followed with success in the case of children suffering from tuberculous or strumous disease of bones and joints—namely, exposure to fresh air with plenty of good food.

When I opened the discussion on the sanatorium or open-air treatment of pulmonary tuberculosis at the Royal Medical and Chirurgical Society in 1899 it required some courage to advocate what many thought was only one more addition to the long list of remedies which they could recall which had enjoyed a short vogue and then disappeared to the limbo of the forgotten. Indeed, there are some who still appear to doubt whether it is a method of any value. To such I would extend an invitation to visit the sanatorium of the Brompton Hospital for Consumption and Diseases of the Chest at Frimley where they will have an opportunity of witnessing the results obtained, when instead of keeping the patients at rest in *liegehallen* they are, as soon as the condition of the disease permits, put to carefully graduated labour, ending with work which one is accustomed to associate with the occupation of a navvy; indeed, their appearance justifies the name which I once ventured to give them, "the consumptive navvies." On one day in the year—and next year it will be June 27th—the visitor will have the opportunity of seeing not only those under treatment but many former patients—and they now number 288—who have thus been restored to health and are following not "some light occupation in the open air" but in most cases that which they followed before their illness, which is generally the only one at which they can earn a living. I am glad that we are to have an opportunity during the session of hearing from Dr. M. S. Paterson, the medical superintendent at Frimley, to whom the whole credit of this development of the sanatorium treatment is due, a fact which it is necessary to emphasise, an account of the results so far obtained from "graduated labour." On the same evening Dr. A. C. Inman, the bacteriologist at the Brompton Hospital, will bring forward some highly interesting observations on the opsonic index in relation to graduated labour in tuberculous subjects. I am disposed to think that the publication of these two papers will mark an epoch in the treatment of pulmonary tuberculosis.

Writing in 1876 of typhus fever Bristowe said: "No European country is free from its occasional epidemic prevalence, but from Ireland it is probably never entirely absent, and, indeed, Great Britain and Ireland may be regarded as its headquarters." There may have been sanguine persons at that time who foretold the practical disappearance of the disease at no distant date, but I suspect that such prophets would have been received without honour. Is it not possible that the next 30 years will witness something of the same character in relation to tuberculosis? The day of compulsory notification of that disease is not, I think, far off, and short of that it has been shown that the visitation of the homes of sufferers who apply for treatment at hospitals and the distribution of leaflets giving information of use to them and to their families are measures of prevention of the greatest value. The provision of hospitals where such sufferers as are especially dangerous to the community may accept a voluntary isolation could be readily effected, for in the small-pox hospitals they already exist. Such institutions should be unnecessary in any well-vaccinated community and are but a monument to the triumph of ignorance and faddism over knowledge and common sense.

The discovery by Schaudinn of the spirochæta pallida as the organism of syphilis is only second in importance to that of Koch just mentioned and is likely to prove of great value in the diagnosis of that disease. Fortunately, in syphilis—at any rate, in certain stages of the disorder—we

have remedies of undoubted efficacy, and from accurate diagnosis to adequate treatment is but a short step. Would that it were always so. We must hope by the recognition and thorough treatment of syphilis in its manageable stages to prevent those later and more remote effects of the poison on the brain and spinal cord which are to a far less degree amenable to specific treatment.

The introduction of the antitoxin treatment of diphtheria has, according to the most trustworthy statistics, diminished the case mortality from that disease by one-half and the reduction in the case mortality of laryngeal cases has been the same. The significance of this latter fact will be best appreciated by those who can remember that one of the greatest triumphs of a house surgeon in times gone by was to have a successful case of tracheotomy in diphtheria.

Thanks to the researches of Pasteur many thousands of those bitten by rabid dogs have been saved from death. The demonstration of the fact that hydrophobia or rabies must be due to a specific micro-organism, although the organism itself still remains unrecognised, alone rendered possible that stout resistance by Mr. Walter Long to the clamour of dog-loving ignorance, a firmness for which he has not received nearly adequate thanks, but which has led to the disappearance of hydrophobia from this island. A single case of hydrophobia watched to its inevitable end will make an impression that will last a life time.

Notwithstanding the marked improvements which have been effected during the last three decades in the sanitary conditions throughout the country typhoid fever still continues to claim its victims by thousands, the total deaths from that cause being given in the Registrar-General's returns for 1905 as 3052. It is, however, satisfactory to learn that the rate per million living was the lowest on record. The pathogenic organism of the disease has been identified and the discovery of the agglutinative phenomenon or Widal reaction has greatly facilitated its diagnosis, as the reaction when positive, provided that a proper technique has been observed, is undoubtedly of great value if a previous attack of typhoid fever can be excluded. The great length of time during which the bacillus may lie dormant within the body, and especially in the gall-bladder and urinary bladder, has shown the necessity for thorough and prolonged disinfection of all the excreta and goes far to explain the occurrence of cases which appeared to originate *de novo*.

In the treatment of typhoid fever we can claim that at least two advances have been made. The name of my colleague, Dr. William Cayley, will, I hope, always be associated with the introduction into this country of the method of treatment by cold bathing and other similar antipyretic measures, for their adoption was greatly due to his advocacy and use. The employment of this method has in my experience completely revolutionised the clinical aspect of the disease and has shown that when thoroughly carried out it effectually prevents the occurrence of what used to be called "the typhoid state" but which may now be defined as a state into which no typhoid patient should ever be allowed to get. How greatly the present practice is an improvement upon that which formerly prevailed can only be realised by those who were brought up in the belief that the diarrhœa should be encouraged as nature's method of eliminating the poison and that the sheet-anchor of treatment was the routine administration of enormous quantities of stimulants.

Surgery has come to the aid of medicine in the effective treatment of perforation of the intestine in typhoid fever and it may be confidently predicted that in a short time it will be generally recognised that immediate operation is necessary for the relief of that condition.

To Sir A. E. Wright and Lieutenant-Colonel David Semple, R.A.M.C., we are indebted for the introduction of the anti-typhoid vaccine and accumulating experience shows that it exercises a very decided protecting influence. The following is one of the most recent examples. In August and September, 1905, 150 persons connected with the 17th Lancers, the regiment being about to proceed to India, were inoculated against enteric fever. Of these 25 refused to submit to the second inoculation. The regiment arrived in India on Sept. 28th; at the end of October enteric fever broke out and there were 63 cases of the disease. Of these 61 cases occurred amongst the uninoculated and only two amongst the inoculated, both of them men who had refused the second dose of the vaccine. Here the uninoculated living under the same conditions as the others supplied an efficient control experiment. It is interesting to learn that Lord Kitchener has expressed a decided opinion that all soldiers about to proceed to India should be inoculated against enteric fever.

It is impossible to read without admiration the story of the researches into the causation of dysentery which have been carried on by scientific workers in all parts of the world during the last 30 years. The outcome appears to be a subdivision of the disease into two forms instead of three—viz., bacillary and amœbic. One learns how much patient labour has been required to unravel the mysteries attendant upon the varieties in form, in cultural character, and in agglutinative and fermentative reactions of the many different types of the bacillus of dysentery and how greatly our knowledge of the infective agent, of its mode of transmission and of its possible effects has been thereby extended. Amongst its manifestations infantile diarrhœa both in summer and winter must now be included. Fortunately the practical application of this advance in knowledge has been immediate; a serum which is both bactericidal and antitoxic has been prepared and it is claimed that by its use in the early stages of bacillary dysentery either cure or marked amelioration may be looked for and that in all stages the results are far better than those given by any other method of treatment.

We are to have the pleasure during the session of hearing a paper by Colonel David Bruce, R.A.M.C., on the subject of Malta Fever, with which disease his name as the discoverer of the parasite will always be associated. The important share which Colonel Bruce has also taken in tracing the chief source of the infection to the milk of the goats of the island will not be forgotten. This knowledge has happily been followed by an almost complete disappearance of the disease from amongst the military population. The civil element appears still to prefer the disease to the remedy. The army should be specially grateful to Colonel Bruce for ridding it of a scourge which, although not the cause of a high percentage mortality, has been fruitful of prolonged illness and great suffering. The mere money value of this discovery may be realised from the fact that in 1905 out of a garrison of 8294 on the Malta station there were 643 admissions to hospital from Malta fever and 16 deaths, whilst no less than 383 men were invalided home. The principal medical officer states in his report that "Malta fever is responsible for a large proportion of serious cases in hospital, deaths and invaliding, and has taxed the nursing staff to the utmost, many of the staff having contracted this disease in the performance of their duties."

Owing to its increasing prevalence in this country attention has recently been much directed to epidemic cerebro-spinal meningitis, which one remembers as a disease mentioned in text-books, but so rarely seen that but little importance was attached to it. It is just 20 years since its essential cause was recognised and by much careful research and observation our knowledge of it has been greatly extended. The discovery by Kernig of the sign which bears his name gave valuable aid in the diagnosis of this and other forms of meningitis, and in the lumbar puncture we have acquired a most interesting addition to our methods of diagnosis and treatment. If the hopes that were first entertained of the utility of this proceeding have not been entirely realised there can be no doubt that when the intracranial pressure is in excess its employment may save the patient from impending death and that by its use and repetition relief may be given to many of the most urgent symptoms of the disease.

The physician may also, I think, claim some share of the credit of the relief of optic neuritis in cerebral tumour and some other conditions accompanied by increase of intracranial pressure obtained by trephining the skull.

The specific organism of small-pox has at length been recognised, for Councilman, whose work in this connexion is well known, writes with confidence that the bodies to which by their discoverer Guanieri the name of *cytoryctes variolæ* has been given are parasites and the cause of the disease. The appearance of these bodies is coincident with the earliest changes in the epithelial cells of the skin and the progressive development of the vesicles is due to an increase of the virus and its spread to neighbouring epithelial cells. In all vaccine lesions, whether in man or animals, similar bodies are found and the identity of the virus of small-pox and vaccinia is clearly established. It would seem that in vaccinia the organism reaches a degree of development short of that attained in small-pox.

There is no better example of the insusceptibility of the English character to the inoculation of the teachings of

science than is afforded by the history of vaccination or better object-lesson than the fact that at the present time a Royal Commission on Vaccination is sitting. It is interesting to note that, notwithstanding the opposition of faddists, science has prevailed, as it must always in the end, and that the principle underlying the practice of vaccination has now become the basis of the most advanced method of treatment of the diseases due to the infection of micro-organisms. At another Royal Commission now sitting 12,818 questions had been asked up to the end of July, mainly with a view to determine whether the progress of medical science has been in any way assisted by experiments made on living animals. I think the whole of the medical profession, and particularly those members of it engaged in scientific research, is under a deep debt of gratitude to Lord Justice Fletcher Moulton for his evidence given before that Commission. It is a statement of the case for vivisection by a layman which, in my opinion, has never been surpassed in precision of thought, in aptness of illustration, or in clearness of exposition. It should be printed as a pamphlet and circulated wherever the unscrupulous literature of antivivisection finds its way. It is especially valuable because, as Lord Justice Fletcher Moulton states at the outset, it is the result of years of careful observation. "Having been a politician and realising that the public take to themselves the right and the duty of controlling everything that goes on in the kingdom I have realised for many years that the question which this Commission is directed to consider would come on in some form or other in the way of an inquiry, that in other words the justification for scientific research in connexion with curative science would be examined. As I have in many other things observed, the advance of science takes the workers in science more and more beyond the ken of the ordinary public and their work grows to be little understood and much misunderstood, and I have felt that the need would come for interpreters between those who are carrying on scientific research and the public in order to explain and justify their work." Science can desire no clearer interpretation of its aims and methods than that contained in the evidence of Lord Justice Fletcher Moulton. Surely there must be elements of surpassing excellence in the character of a people which can hold so high a place amongst the nations of the world in spite of its contempt for the advantages of education and the discoveries of science. Let us hope that Great Britain will continue to hold its place but see reason to mend its ways.

Measles is a disease to which all mankind from the age of about one year upwards appear to be susceptible, and owing to its extremely infectious character, especially in the pre-eruptive and early stages, a general knowledge of the signs by which it may then be recognised is a matter of importance to the community. The discovery by Koplik of such a sign is a most valuable contribution to medicine. His description of the lesion is as follows: "If we look in the mouth at this period [invasion] we see a redness of the fauces; perhaps not in all cases a few spots on the soft palate. On the buccal membrane and inside of the lips we invariably see a distinct eruption which consists of small irregular spots of a bright red colour. In the centre of each spot there is noted in strong daylight a minute bluish-white speck. These red spots, with accompanying speck of bluish-white colour, are absolutely pathognomonic of beginning measles and when seen can be relied upon as a forerunner of this eruption." These spots appear to be present in about 95 per cent. of cases of measles, usually one or two days before the eruption appears on the skin.

Our knowledge of the pathology of pneumonia, perhaps the most interesting of all diseases to the physician—for in none may there be witnessed such a rapid transition from a condition of the gravest danger to life to one in which recovery is almost certainly assured—has made great advances during the last three decades. It is now unhesitatingly classed amongst the acute infectious disorders, thus justifying the view long held by von Jurgensen and always strongly supported by the late Sir Andrew Clark. Our treatment of the disease has become less meddlesome and more rational. The enormous quantities of stimulants thought by some in my younger days to be necessary in all cases are no longer given and the value of the judicious use of antipyretic measures is generally recognised. We are still without any specific treatment for pneumococcal infection, for the organism does not, like the causative agents of diphtheria, readily lend itself to the preparation of an antitoxin. The society has arranged for a discussion on pneumococcal infections, to be opened by Professor W. Osler, which will, I trust, throw light upon the pathology and treatment of a great variety of affections until lately regarded as independent diseases but now recognised as due to a single exciting cause.

The period under review would be memorable in the history of medicine for the advance of our knowledge of tropical diseases, even if that stood alone. If it is possible to convince the Government and people of this country of the value of scientific research for its own sake and of the necessity for its liberal endowment it should surely come from the demonstration of the dependence of malaria upon the action of pathogenic protozoa and of the carriage of the organisms by the different species of the mosquitoes of the genus anopheles, work in which British medicine has played such a distinguished and honourable part. It is a duty and pleasure to acknowledge the support which such researches invariably received from Mr. Joseph Chamberlain when at the head of the Colonial Office, a bright and quite unusual example on the part of a statesman of appreciation of the claims of science to official recognition. No country in the world is so deeply interested as Great Britain in the attempt to render the tropical and subtropical regions habitable at all seasons by Europeans, and already there has been a most marked diminution in the incidence of, and mortality from, malaria in districts where the problem of the destruction of the breeding places of the mosquito has been systematically attacked. The best example of what may be done is afforded by the action taken at Ismailia where in 1885 the number of persons attacked was 2000; in 1895, 1350; and in 1905, 37. Since 1904 nearly all the cases have been relapses amongst persons previously infected. Since last year all trace of malaria has disappeared from Ismailia.

The recent history of yellow fever is a fascinating and exciting story replete with incidents of self-sacrifice in the cause of science worthy of the recognition which is reserved for deeds of valour on the field of battle. Its earlier chapters form a record of careful and often accurate observations which led to little but confusion and mystery until illumined by the discovery that the mosquito—stegomyia fasciata—is the carrier of the disease, a fact now as well established as that the anopheles carry the organisms of malaria. Havana, for long one of the chief endemic foci of yellow fever, has already been practically freed from it by the adoption of measures similar to, but not quite the same as, those found efficacious in dealing with malaria. Colonel Gorgas, Assistant Surgeon-General in the United States Army, now the chief sanitary officer in charge of the Panama Canal works and previously employed in Havana, states that it only took seven months to free Havana from yellow fever. The Americans took possession of the Panama Canal zone in 1904 and the last case of yellow fever occurred in December, 1905, a period of 16 months, the length of which Colonel Gorgas deplores. But I think, considering that the extreme prevalence of this disease was the main cause of the previous failures to construct the canal, he may regard it as a not very unsatisfactory result of his labours. Colonel Gorgas states: "I am inclined to think that the advances made in recent years in tropical sanitation will have a much wider and more far-reaching effect than freeing Havana from yellow fever and enabling us to build the Panama Canal. I think the sanitarian can now show that any population coming into the tropics can protect itself against malaria and yellow fever by means that are both simple and inexpensive; that with these two diseases eliminated life in the tropics for the Anglo-Saxon will be more healthful than in the temperate zone; that gradually within the next two or three centuries tropical countries, which offer a much greater return for man's labour than do those in the temperate zone, will be settled by the white races; and that, again, the centres of wealth, civilisation, and population will be in the tropics as they were in the dawn of man's history rather than in the temperate zone as at present." If this dream is ever realised and London comes to be regarded as "the back of beyond," whilst all the world waits to know what they are thinking on the shores of the Victoria Nyanza, it will be scientific research in medicine which has rendered possible such a stupendous change.

The discovery of trypanosomes as the cause of various diseases of man and animals is an event of interest and importance equal to, if not greater than, that just referred to.

If we consider the extensive area of the earth's surface over which these diseases prevail, the enormous mortality from sleeping sickness, so great, indeed, that large native populations are now in process of extinction in Africa owing to its ravages, and the great losses of horses, cattle, and other domestic animals from the tsetse-fly disease, we shall begin to appreciate how great is the gain which may follow from this advance in knowledge.

The importance of the additions to our knowledge of cholera can hardly be overstated. The pathogenic organism has been recognised, and the proof is clear that the disease follows the lines of human travel and that man is the carrier of the virus.

The cause of plague is no longer a mystery and the measures which should be taken to prevent its entrance into a community and to limit its spread are clearly indicated, and their application when thorough is efficient to those ends; but unfortunately amongst the native races which furnish its chief victims ignorance and prejudice continue to a great extent to frustrate the best efforts to stamp out the disease. In an appreciation of the work of Professor Haffkine and in reference to the prophylactic against plague which he has introduced, and of which 6,000,000 doses have been used in India alone, Ronald Ross states: "I suppose that no one living or dead except Jenner has saved so much life as he has."

Plague, cholera, and yellow fever are the three epidemic diseases which have been responsible for the greatest mortality amongst mankind. To have shown how one alone could be prevented would have shed lustre on any period in medical science.

Acute rheumatism is a disease in which I have always taken a special interest, having in my student days been a sufferer from it and having on an observation made on my own case founded my first paper on a medical subject. It was entitled "On the Association of Affections of the Throat with Acute Rheumatism." It is now generally recognised that tonsillitis is frequently followed by acute rheumatism and its recognition, leading as it has done to the early administration of antirheumatic remedies in that and other allied affections of the throat, has, I feel confident, prevented in many cases the subsequent occurrence of rheumatic fever. Dr. F. J. Poynton, our senior honorary secretary, whose work has thrown so much light upon the pathology of acute rheumatism, and in whose presence I speak with diffidence, states that striking examples occur which show that the throat is one of the channels of infection. The introduction of the salicylate treatment of acute rheumatism was a great advance in therapeutics and of its value there can be no doubt. My own impression is decided that the incidence of pericarditis has considerably diminished since its introduction. On the general question of the pathology of the disease I venture to express my opinion that the views which Dr. Poynton and Dr. A. Paine have put forward, based as they are upon most careful researches and confirmed by many independent observers, will in the near future meet with complete acceptance, and that the organism which they have isolated and named the diplococcus rheumaticus will prove to be the specific cause of the disease.

It is just 30 years since the late Dr. W. M. Ord, who at a later period was President of this society during my term of office as honorary secretary, read at the Royal Medical and Chirurgical Society his paper on "Myxœdema, a term proposed to be applied to an Essential Condition in the 'Cretinoid' Affection occasionally observed in Middle-aged Women." It may, I think, be affirmed that no one at the time had realised that a gland which has no excretory duct may furnish an internal secretion essential to metabolism, yet some of the most interesting problems in the medicine of to-day are connected with the effects of internal secretions.

The chapter in the history of medicine which deals with the diseases of the thyroid gland is brilliant and fascinating and has been almost entirely written in our own time. First comes the recognition of the symptom-complex, then it is given a name "myxœdema," then a train of symptoms is observed to follow upon the removal of the thyroid gland; their likeness to myxœdema is recognised, the dependence of myxœdema, cachexia strumipriva, and cretinism upon the loss of function of the thyroid gland is made clear, and last and greatest triumph of all comes the proof that all these conditions are capable of cure by the administration of the gland or of an extract of it.

Writing in 1876 of the diseases of the pancreas Bristowe says: "Very little of clinical value is known about the diseases of the pancreas." It recalls the contents of the chapter on the snakes in Iceland. If this is contrasted with our present-day knowledge of acute pancreatitis, hæmorrhagic, suppurative, or gangrenous, of chronic pancreatitis and its relation to diabetes and to obstruction of the duct by pancreatic calculi and gall-stones, of pancreatic cysts and new growths, it will be seen how far we have progressed since that date.

The contrast between now and then is equally marked in relation to the diseases of the alimentary canal. We have learned the importance of maintaining so far as possible an aseptic condition of the mouth and of the grave disorders of the blood which may arise from the constant presence of micro-organisms in and around the teeth. Our knowledge of the physiology and pathology of secretion and digestion has made such enormous advance during this period that to describe in the briefest outline what has been done would require a longer time than I can venture to give to medicine as a whole.

Medicine may surely claim from surgery some share of the credit due for the more accurate diagnosis and efficient treatment of many gastric diseases and especially of gastric ulcer and duodenal ulcer.

I have left myself no time for more than a passing reference to the fact that in recent years a new science of hæmatology has been created. It is now realised that an accurate knowledge of the state of the blood is essential for the diagnosis and prognosis of a variety of affections too numerous to mention. In the clinical laboratory of every general hospital there are workers whose whole time is occupied with these observations upon the blood.

To do justice to the advance in the knowledge of the diseases of the nervous system would require not one but many hours. Here, again, the infective nature of many cerebral and spinal diseases has become manifest. We have learned to differentiate the various forms of meningitis and the relation of posterior basic meningitis to the epidemic form. Bacteriology has already thrown light on the causation of Landry's paralysis and of acute poliomyelitis and will give more aid in the future in those and other diseases. The advance in the localisation of the functions of the brain by itself marks an epoch, and the success now obtained in the treatment of hysteria and allied conditions has removed a reproach to medicine.

Surely it is impossible for anyone acquainted with the facts which I have only been able to sketch in the merest outline, an outline from which the improvements in pharmacy and many branches of therapeutics have been entirely omitted, to maintain that medicine stands where it did. Rather I would claim that having regard to the wide field which it covers the advance of medicine has been during the last 30 years infinitely greater in the mass than that of surgery, although not perhaps so readily appreciable by the public. What of the future? Of that I believe we need have no fear. It will far outstrip the past. We are as yet but on the threshold of the knowledge which will illumine all the dark recesses of that ignorance which is shared by medicine with all the other sciences and which in our several spheres it is the duty of each one of us to attempt to remove.

## A CONTRIBUTION TO THE ANALYSIS OF THE MENTAL PROCESS IN CRIMINAL ACTS.[1]

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THE criminal is usually viewed as an abnormal person and precautions are taken by society to eliminate or to sequestrate him. It is not generally accepted that a criminal act may be a perfectly normal one as regards the mental process involved; in fact, it generally is so, and even when the criminal act is due to disease the mental process differs in no way from that of the normal state. Hence a criminal prepares his plans and carries them out just as an ordinary person, and the mental process in the person who is criminal through disease is like the usual one to which we are

[1] A paper read before the International Congress on Psychology at Amsterdam on Sept. 3rd, 1907.

accustomed: the motive may be socially a wrong one but the view of the end and the way of arriving at it are just the same as in ordinary simple or compound voluntary actions, and it is this point which has not been sufficiently regarded which I wish to emphasise.

As social systems become better educated they lose the idea of revenge whilst taking steps to render themselves more secure, and they recognise that it may be possible to reclaim the young offender by educating him to the artificial trend of the recognised ideas of the day, by noting that what he has done is not in accordance with what the particular social code insists on having, and that before it is too late new processes may be established; not that the old ones were of necessity diseased—the result of a morbid process—but that they were the normal outcome of inefficient or of bad training.

Society must see that after all it is not very long since men were in a savage state and that in the gradual change through evolution to a higher order there must be throw-backs or reversions, failures and impossibilities, whilst all the time the machinery for accomplishing the evolution is itself an artificial one and is only imperfectly applied. To treat people by putting them in prison is often only treating the result of licensed errors brought about by neglecting the proper form of restraint or education. We allow the insane to move freely in our midst, the drunkard, the syphilised, and the tuberculous to procreate their species and to neglect their families, and then we are apt to call "abnormal" the results of our mistaken judgment, whilst we fail to see that by allowing what we do we are deliberately bringing about a reversion, we are reducing the rose to the initial brier, the evolved plant to the original weed, a perfectly normal process in place of the educated product. We should indeed expect that instead of what we call criminal action (which is often merely natural action) being of a different order from the ideal, the latter is the one in which we ought to look for irregularity; in what we call the "vices" of civilisation there is real "criminality," and if there is a canker in the mental process it should be looked for in what we think over-perfection of mechanism which is but an imperfectly-elaborated artificialism, liable to break down under stress on its incongruous components.

In the animal world we note how one will kill for the sake of eating, the appeasing of hunger being the motive; another will kill for the mere sake of killing; these we may take to be normal mental processes. Some animals may be trained (educated) to go higher than their instincts, others cannot be educated (tamed). When they are tamed they easily revert to their original condition if allowed to do, but it rarely occurs to us to consider that if there is any abnormality in the mental process it must be in the artificial one of the higher education or training. Animals may be taught (by a superior being) to attain intellectual heights from which they soon fall, and not all of them are educable. Can an educated (trained and tamed) animal train a younger one of its own species? It never does, nor does it transmit these new tendencies; so that we cannot train or breed a higher-minded class of animals. It is difficult to see what degree of responsibility could be granted to a trained animal though this actual educating process brings with it responsibility. A humane and considerate tiger is unthinkable, and so it seems that "cruelty" is a term, like "ferocious," which implies a more simple form of brain action. Man is, then, of the nature of a wild beast, impulsive and liable to explode, but educable to an artificial restraint, the perfection of which cannot be measured, and the responsibility of relapsing from which can with difficulty be appraised. In a few an almost perfect ideal state may be established, critical and unexplosive, and between this and the original state there are all grades.

The young child if uneducated grows selfish, its natural trend is not altruistic, it comes under the restraint of law and order which are artificial—i.e., it has to learn to subordinate instincts to social requirements, to balance motives, to have a determinate view of the end and to act accordingly. The result is that whilst most are educable to the required standard, some are not; that some can be brought only to a certain degree of perfection (short of the standard), while others fall away when left to act by themselves. In other words, some there must always be whose mental processes remain simple, incapable of taking on an artificial education but perfect in their action such as it is.

After nations have reached their greatest heights many appear incapable of bearing the strain, of submitting longer to the discipline which seems inseparable from the higher developments; in their decline they become more selfish, and being thus less ready to estimate faults as faults they become more inclined to condone them and less inclined to punish with severity; these are forms of government which are more ready to remit death sentences.

Thus criminal types are but stages in evolution towards a rarely attainable perfection, and the process is the cultivation of inhibition under certain conditions. The "criminal" is of two kinds—the sane and the insane, and the mental processes follow what we recognise as the regular conditions of impulsive and voluntary action. In the analysis of the mental state called "volition," what we designate "feeling" is perhaps the principal component. There are two processes in volition: an internal, which consists of feeling, idea, and motive; and an external, which consists of muscle-sensations, perception of movement, and their results; and the chief characteristic of voluntary action is that the thought of the end to be realised accompanies or precedes it. Impulsive action differs from voluntary action, not in the question of the existence of feeling, not in the view of the end to be realised, but in this, that there is no reflexion nor choice at all; the one is a simple, the other a complex, voluntary process. Of all these components of volition the most important element is Feeling. We know little about it except that it is a simple and non-decomposable mental state. When mixed with an idea it is called an "emotion." By introspection we note that there are ideas without any feeling, but the same idea may come to have a feeling tone—e.g., we regard an object and have an idea of it without any particular feeling; all at once we experience a desire, the feeling of wanting it arises, and is associated with the idea, as far as we can tell without other ideas coming into consciousness, then the feeling becomes stronger and gradually displaces the idea which retires into the background. This strong feeling prompts muscular action of the appropriate kind, and with this discharge the content is satisfied. Having once obtained possession the feeling ceases and perhaps the stolen object is returned or not used. Or an idea with a strong feeling may arise and the feeling dies out, leaving only the idea. Perhaps feeling and knowledge of the end are identical, and as strong feeling narrows the field of consciousness the idea of the end becomes the sole content and this means motor explosiveness and accomplishment which in turn react and evoke motor ideas. Now these motor ideas and perceptions coming into consciousness show the individual what he has done; hence the remorse of murderers or of those who have committed impulsive acts, their fright, their attempts to escape, &c. It must be remembered that particular feelings have special modes of egress; thus grief or pain and joy cause different motor groupings and these react by setting up corresponding ideas, and in this connexion we note that an intense emotional state may (through the muscular and visceral systems) set up ideas to relieve itself—e.g., when a man furious at an insult by another person buys a weapon to use to relieve the emotion. Emotion thus becomes an agent in satisfying a mental need (return to equilibrium) just as the feeling of hunger leads to acts for satisfying a bodily need. In this way emotion, though leading to an act which is criminal, is strictly teleological and conservative and normal in its mode. Of two persons one may act as above delineated, impulsively; the other does not do so, but though under the influence of strong feelings he sets to work to relieve his feelings in another way, he has the same view of the end but he chooses other means—e.g., legal methods. What determines the difference between the two? Is it not due to education and environment and to the state of the law? The law says in effect: "You may get relief for your emotional state by coming to me and letting me settle what injury is to be inflicted on your adversary, but you must not yourself adjust your own mental equilibrium, because even a physiological process which involves possibly fatal injury to others must be settled by myself who am the embodiment of the preponderating opinion of the community. There are circumstances when I will allow you to revenge a national insult by killing others, but though the mental process is the same in the two instances you may not act in your own case unless I first of all give you authority." The so-called criminal or immoral act is then often the normal act, and the so-called moral person may be one who, though feeling strongly, is led by his education and environment into other ways of relieving his brain hunger. If A without provocation attacks

B, and B in defending himself goes beyond mere defence and kills A, he (B) would probably be relieved of responsibility, but if B were to buy a pistol and afterwards to shoot A he would (probably) not be relieved of responsibility but would figure as a criminal. Why? What is the difference in the mental processes? None. In each the end in view is the same and delay has not only not relieved the mental tension but may have intensified it.

The mental process, then, in the criminal may be a normal one—i.e., as far as the physiological process goes. When is it abnormal or pathological? In the influence of delusions—i.e., insane motive (or feeling + idea)—there is the same physiological effort to restore equilibrium, but inasmuch as the man is not deemed responsible for the idea he is not held fit for punishment, though, given the idea, the act is a normal act. A person who commits suicide is usually considered insane, but really he is often very sane; the murderer may be sane or insane, the process of mental action in the two is quite alike.

Anyone acquainted with asylum life knows how frequently impulsive acts are committed, simple ideas leading to serious motor disturbance because of the intense feeling which accompanies or arises in them. The same idea under states of quietude or of stimulus has a different intensity of feeling—e.g., alcohol whilst apparently not affecting the idea itself may increase its feeling tone. Is this (following Wundt) owing to a summation of feeling by incidentally aroused association ideas? Resistance to the flow of ideas seems to raise the tensive side of the idea or the feeling, and so we find much feeling with paucity of ideas.

We are still very much in the dark as to the way in which nerve cells act, but this much seems clear that they discharge in an explosive manner. I have endeavoured to find the record of experiments bearing upon this point, but hitherto without success. Whatever may ultimately prove to be the true nature of feeling it seems to be associated in some way with what may be termed the tensile strain of the cell, so that a painful or a joyous feeling may mean a condition similar to electric tension, and discharge through a motor tract is equivalent to a loss of the feeling, to return to a condition of equilibrium. This discharge may be in a motor or a psychic direction, and which direction it does take depends often on trend, and it may so expend itself—e.g., some individuals, however strong their feelings, have only increased association-motives (or ideas with feeling), others act at once and have no associated ideas. In either case the individual may be blamed—e.g., a man sees a person drowning, and though unable to swim he goes to save him and is himself drowned; he acts on impulse owing to his emotional tension. Another who may or may not be able to swim does not act, but his plus emotional state leads him to think of, or rather spends itself in thinking of, all sorts of things; meanwhile the person drowns. In the former case, which is in accordance with the nature of the majority of so-called criminal acts, the man is termed "brave"; in the other, which is a true instance of complex voluntary action, he is blamed, perhaps even accused of criminal neglect.

Where, then, does the so-called abnormality of the criminal come in? With the frequency of the idea the emotional tone should lessen and finally disappear, and so it does when (by education or environment) there are plenty of ideas to be associated or when the resistance of the cell to explosiveness, otherwise its capacity for bearing strain, is great, and here we have the mind of the deliberate criminal who lays plots to circumvent his victim whilst trying to keep suspicion from himself.

The morbidity or the wickedness of the criminal type is not that the acts are of perverted action, of incorrect physiological display, but that they are results which society objects to, for does not society say: "You may act on impulse if the act does not bring about the death of a citizen, or you may act with deliberation if the act does not accomplish the destruction of a member of the community." In short, criminal acts are the necessary and correct results of certain internal processes.

If there is such a thing as abnormality or disease in the criminal or in the insane it may be said to consist in this, that the emotional tone is stronger than the idea should carry with it, and that it is too ready to touch off on the motor side, or else that wrong ideas (delusions) obtain reinforcement and then their emotional tone may be either suddenly dissipated or slowly diffused among other ideas, ending, however, in an act of which society disapproves, though the mechanism of the process is an entirely correct one and leads just to the result which it ought to do.

We require more physical experiments on the subject of emotion. Quite recently Dr. Peterson of New York read before the Pyschological Section of the British Medical Association at Exeter some experiments on this subject made by Dr. Jung and himself with a Dupré-d'Arsonal galvanometer. In normal cases there were a deflection proportionate to the degree of emotion aroused and a weakening of response after repeated stimuli. One of his charts showed that in a case of stupor the record was a straight line, indicating a complete want of response, conscious or unconscious, to emotional stimuli. In these charts the changes of curve were seen to correspond with changes brought about in the emotional tone, the idea being all along the same. It would have been interesting to note what would have been the curve in the stuporous case if (as is not uncommon in this class of persons) some impulsive or emotional state had suddenly manifested itself. Simple change of idea did not cause any elevation in the curve, but when the idea was associated with emotion the result was manifest and immediate. To have got so far is, however, not enough. We want to know what are the conditions which make the cell discharge more suddenly, be less tolerant of tension. Doubtless some persons are less tolerant of explosive energy than are others and these are the people who are naturally very impulsive; in others there is a greater possibility of radiation into surrounding associations by which the explosiveness and the emotional tone are dissipated. We are still in the dark about inhibition and to say that a person who acts impulsively has either lost or has never had complete inhibitive control of his lower centres does not help us much. There are many people who have lesion of the upper centres who are yet not impulsive, and there are numbers who, as far as we can tell, are in sound mental condition but who are very impulsive. What are the physiological or the pathological conditions which render a cell more explosive than it should be? Are these changes chemical or physical? Are cells capable of education so that an ordinarily impulsive person can be made into one of more truly complex voluntary activity, or is it that the explosions can be checked by the education of controlling processes, by the establishment of inhibition?

We know that certain chemical compounds such as alcohol, certain morbid states such as epilepsy, cause or eventuate in a minus resisting power of the central nervous system, so that impulsive explosive acts are more common. What we want, however, to know is whether the conditions which favour explosiveness are such as to constitute an abnormality, congenital and uneducable, or whether they may be set up by disease in the cells themselves and are not due to loss of control by higher centres.

It will be said perhaps that what I have theoretically assumed as regards the natural or acquired explosiveness of central mechanism postulates the difference between criminal and non-criminal acts and shows that the two processes are not the same, that whilst there is a normal, reflective, and inhibitory condition there is an abnormal impulsive one due to alterations in the conditions of emotion. It is quite true that wrong acts are committed against society which are due to want of up-to-date evolution, but they are in many instances due to the normal action of an imperfectly evolved or educated material, in others perhaps disease may have reduced the processes to another level, in yet others the "criminal" processes may be of the highest form of mental elaboration; still in all of these there is nothing to show that the mental process is other than what we might expect, it works out its end in the only possible way.

In the march from the simple to the complex, from the most impulsive to the most volitional, there must be failures and recidivists. To expect a perfect subordination of conduct to the ideal is to assume perfection from processes which are confessedly in a transition state. Society is exigent, it lays down laws for its own protection, not perhaps forgetting, but rather choosing to think that the members of the community are still on the road only to what in its religion and its precepts it lays down as perfection, that not only in the meantime may the machinery become disarranged but that it is not yet perfected. Shortcomings from the ideal are common enough; indeed, they form quite a large proportion of our acts, and when they are of a certain kind society takes notice of them, punishes the individual and ostracises him, not because he has acted

incorrectly—i.e., because there is something at fault in the machinery—but because he has acted wrongly—i.e., in a way contrary to the dicta of the *vis major*, the society standard.

A piece of machinery goes on acting according to its construction for a long time, and it seems to us at the time to be perfect and complete; all at once it breaks down and stops; the process is a perfectly natural and correct one; the wrong action would have been if it had continued to go on under circumstances which are incompatible with progression. So is it with mental processes; we legislate for perfection, not remembering that the machinery is as yet imperfectly developed for perfection. In some cases the materials are of inferior quality and they last only for a short time, but the action is perfect in its kind as far as it goes, and when it fails, it fails in accordance with what it ought to do; in other cases there are no materials for elaboration, the machine cannot be raised towards the ideal; it acts in a correct and certain way but not with the perfection which we expect, and it fails because we expect what is for it impossible. In others the action of the machine seems perfect but it does not stop when it should, and in its unchecked working it offends the social system—then this action is called "criminal," whilst all the time the conditions under which it was running were not perceived and ought to have been arrested, though the process was an entirely correct one and was working itself out in the only possible way.

Let us, then, understand the "criminal" process. It is not irregularity of action: it is the only possible action. We must regard the elements of the act, the factors, and the only way to be fair to the individual is to stop him when we notice something in the mechanism which is bound to work out in a way full of what the social majority deems to be danger to itself, or else to let things go on in their inevitable outworking and then, regardless of the individual, protect itself in the way which seems to it to be the best, recognising that the laws of matter are not always compatible with the ideals of mind which are artificially set up. For some natures it is the right thing to kill, for others it is the right thing to steal—i.e., no other result is possible. When society gets hold of people who act in this way it suppresses them for the time being or else it eliminates them. There are too many weeds to have all exotics, but the weed is still a natural product.

To recapitulate. My position is that in criminal acts the mental process introduces no fresh element. If in the insane a criminal act occurs the only fresh element is the false motive, which, however, acts in the same way as does a normal one. The constituents of the voluntary process are the same in kind as in normal minds: motive, desire, feeling, end in view, action on presentation (otherwise impulse), action upon reflection—all may occur in the same way as in normal thought processes. The only difference is not in the mechanism of the elements but in their nature; thus the motive may be a wrong one (i.e., against the accepted obligations of society) or the element of feeling may be an irregular one due to structural conditions, but we must remember that just as social systems are temporary—are themselves in a mutable condition—so are mental processes. We have not in the one the perfection of organisation, though such as it is it acts in accordance with its construction; neither have we in the other any but a temporary adaptation, though such as it is it acts in the way we should expect it to do, and in this expectation we are rarely disappointed.

The limit of time prevents more than this brief statement of what I venture to think is an important fact to insist on and one which is not usually borne in mind—viz., the similarity of the process in criminal and legal acts. I am not discussing the question of how far the motives affect responsibility nor how far the explosiveness of feeling may be an exculpating factor. I just ask the indulgence of my medical *confrères* in insisting upon a point which by some may be considered self-evident, but which perhaps may be deemed worthy of categorical statement and of official reception or rejection.

Harley-street, W.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.—At the monthly meeting of the President and Fellows of the Royal College of Physicians of Ireland held on Nov. 1st Dr. Charles Jacobs Tillekeratne was admitted a Licentiate in Midwifery of the College.

# CHRONIC INTESTINAL OBSTRUCTION DUE TO ADHESION OF A UTERINE FIBROID TO THE MESENTERY.

BY ALBAN H. G. DORAN, F.R.C.S. ENG.,
SURGEON TO THE SAMARITAN FREE HOSPITAL, LONDON.

A PATIENT with a small, empty umbilical sac and a lobulated uterine fibroid tumour suffered for a year from symptoms of obstruction the source of which could not be determined. When the abdominal cavity was opened the symptoms were found to be due to an adhesion of one lobe of the tumour to the mesentery, forming an arch under which coils of small intestine became incarcerated. The tumour was also remarkable for its relations to the left broad ligament. Such were the features of interest about the case which I will now relate in detail.

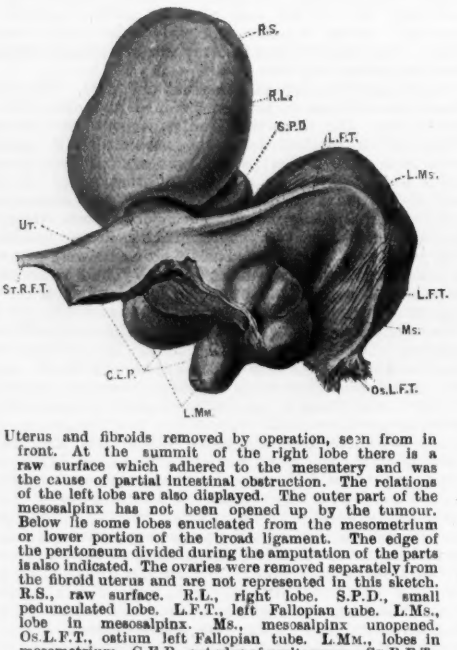
A woman, aged 50 years, came under the care of Mr. E. B. Leslie Moore of Harlesden in the summer of 1906 for an attack of severe abdominal pain, tenderness, distension, and vomiting. She had been married for 25 years and had borne two children. Her last pregnancy ended when she was 31 years of age. There was a small umbilical hernia which apparently consisted of nothing more than an empty sac. The bowels could be freely opened and the symptoms subsided and disappeared after the patient had kept in bed for a few days. The attacks, however, repeatedly recurred at intervals of from two to four weeks. Mr. Moore, on examining her at the end of June, 1907, detected an abdominal tumour which was clearly a lobulated uterine fibroid. She was admitted into my wards in the Samaritan Free Hospital on July 8th.

On admission the patient was stout and pale. There was a large varicose ulcer on the inner side of the lower third of the left leg. The urine was scanty; it contained pale-red urates and a distinct trace of albumin; its specific gravity was 1020. The patient was not allowed to get up for a few days; by the end of that space of time the daily excretion of urine exceeded 30 fluid ounces and the albumin had disappeared. The abdomen was extremely distended, measuring 41 inches in girth at the umbilical level, yet it was not tense. The integuments were pale and the subcutaneous veins were not dilated. There was a small protrusion at the umbilicus not one inch in diameter. The integuments were red; the neck of the sac admitted the tip of the forefinger and was apparently free from any adherent omentum. The sac seemed quite empty. The abdomen was tender to the touch and a bilobed mass, not freely moveable, occupied the hypogastrium. On bimanual palpation the uterus was found to be continuous with the mass which did not extend downwards below the brim of the pelvis. The periods were irregular, appearing within less than three weeks' interval; the show was more free than before the illness, but there had never been any attacks of severe hæmorrhage. The significance of the attacks of pain, tenderness, distension, and vomiting remained uncertain. There was no obstruction to the passage of flatus and fæces. The patient lived in dread of a recurrence of the symptoms.

I operated on July 16th. The tumour was bulky and solid and could not be delivered until the abdominal incision had been prolonged into the hernial sac. Then I found that the right lobe was completely separate from the left and that its uppermost part adhered posteriorly to about four inches of mesentery, close to intestine. That portion of intestine was in no way obstructed, but under the arch formed by the adhesion were several coils distinctly incarcerated. They were drawn out without any difficulty. The cause of the symptoms of obstruction was now evident. There was no other adhesion, parietal, omental, or visceral. The vessels running from the mesentery to the tumour at the point of adhesion were large and the adhesion itself was nearly one inch broad in the middle. I dissected up a thin layer of the serous coat and subjacent capsule of the tumour around the adhesion and secured it with sutures; the fibroid was then severed from the mesentery without any loss of blood. The right Fallopian tube and ovary lay quite free from the tumour which had pushed them down into the pelvis. The right ovarian vessels were ligatured and divided; the right round ligament was moderately hypertrophied and required to be ligatured on both sides before division. A Doyen's clamp was applied to the right broad ligament which was then divided. The left lobe, or, more correctly

speaking, the left tumour, formed a collection of solid and cystic lobules, the cysts being, at least in part, obstructed and dilated lymphatics. The left ovary lay completely below this tumour; the relations of the parts were made clear when it was found that the left Fallopian tube ran over the surface of the tumour. An extremely œdematous body occupied the outer limits of the tumour in the left iliac fossa. It proved to be the left infundibulo-pelvic ligament with dilated lymphatics and greatly engorged veins. It was ligatured and divided. The left round ligament was distinctly hypertrophied; raising a deep fold from the anterior layer of the broad ligament in which lay a fibroid of the size of a filbert, this was enucleated and then the round ligament was ligatured and divided. The left broad ligament and the serous coat of the anterior surface of the uterus were divided anteriorly, horizontally, and continuously with the line of division of the right broad ligament. The uterine vessels were now secured without difficulty; the left artery was greatly dilated. Then the base of the entire left tumour was enucleated from the lower part of the left broad ligament and the uterus was amputated above the cervix, the stump being treated in the usual manner. Lastly, I dissected away the small umbilical sac. It was absolutely empty and there were no adhesions to the neck either within or behind it. Convalescence was retarded by an attack of parametritis in the base of the left broad ligament where the connective tissue had been unavoidably bruised during the enucleation of the left tumour, but on returning home the patient soon regained her strength. The tumour, which weighed 2 pounds 14 ounces, is preserved in the Museum of the Royal College of Surgeons of England. The appended illustrations represent its appearances very accurately, so that a lengthy pathological report would here be superfluous.

FIG. 1.

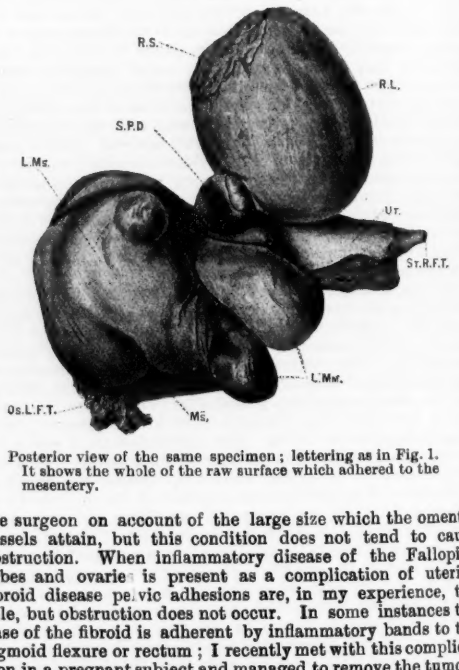



Uterus and fibroids removed by operation, seen from in front. At the summit of the right lobe there is a raw surface which adhered to the mesentery and was the cause of partial intestinal obstruction. The relations of the left lobe are also displayed. The outer part of the mesosalpinx has not been opened up by the tumour. Below lie some lobes enucleated from the mesometrium or lower portion of the broad ligament. The edge of the peritoneum divided during the amputation of the parts is also indicated. The ovaries were removed separately from the fibroid uterus and are not represented in this sketch. R.S., raw surface. R.L., right lobe. S.P.D., small pedunculated lobe. L.F.T., left Fallopian tube. L.Ms., lobe in mesosalpinx. Ms., mesosalpinx unopened. Os.L.F.T., ostium left Fallopian tube. L.Mm., lobes in mesometrium. C.E.P., cut edge of peritoneum. St.R.F.T., stump right Fallopian tube. Ut., uterus.

With regard to the symptoms of obstruction, the acute attacks of pain were in every instance associated with four of the symptoms observed in intestinal obstruction and in every instance two other cardinal symptoms were absent. Flatus always passed and the bowels could be opened without difficulty when the patient took to her bed, no doubt because rest in the recumbent posture allowed the incarcerated bowel to set itself free. The small umbilical sac felt empty, but touch alone was insufficient for diagnosis, and we could not make sure that there was not some condition favouring obstruction in the peritoneal cavity adjacent to the neck of the sac. There was a tumour in the lower part of the abdomen and it was correctly diagnosed. But uterine fibroids rarely obstruct any part of the intestine even indirectly, and in this case it is hard to see how the nature of the obstruction, in which the fibroid was directly concerned, could have been diagnosed. When the abdominal cavity was opened the nature of the obstruction, which could not have been determined by the clinical history or by touch, became evident to the eye. Without doubt several coils of small intestine were partially obstructed in the manner above described. In this case the essential feature was the unusual variety of obstruction which complicated it. It is not necessary for me to discuss intestinal obstruction in full, but I will add a few observations on its cause in the instance here recorded.

As to uterine fibroids and adhesions, experience has amply shown that fibroid tumours of the uterus do not often contract adhesions to adjacent parts, a fact of some interest when we remember how frequently we meet with that complication in association with ovarian new growths, especially dermoids. I summed up my own experience of adhesions in my third Harveian lecture on Fibroids of the Uterus and its Ligaments considered from a Clinical and Surgical Standpoint.[1] We are here concerned with adhesions which are more or less liable to cause obstruction. Intimate, broad, and old-standing connexions between the omentum and the surface of a large fibroid are mainly interesting to

FIG. 2.




Posterior view of the same specimen; lettering as in Fig. 1. It shows the whole of the raw surface which adhered to the mesentery.

the surgeon on account of the large size which the omental vessels attain, but this condition does not tend to cause obstruction. When inflammatory disease of the Fallopian tubes and ovaries is present as a complication of uterine fibroid disease pelvic adhesions are, in my experience, the rule, but obstruction does not occur. In some instances the base of the fibroid is adherent by inflammatory bands to the sigmoid flexure or rectum; I recently met with this complication in a pregnant subject and managed to remove the tumour which was of the subperitoneal type without interrupting the pregnancy, but I could find no evidence of obstruction. We might expect otherwise when a narrow piece of omentum, often drawn out to a cord-like process an inch or more in length, has become attached to a fibroid. Nevertheless I find from my notes that I have several times recorded this condition in patients who had never suffered from any symptoms indicating obstruction. It is the same, according to my experience, with adhesions of appendices epiploicæ, where a big arch is formed between the large intestine and the tumour, looking as though it were a regular ileum-trap. I shall revert to one case of interest where this condition was marked, but will first dismiss the subject of intestinal adhesions. They give great trouble to the operator, and in one case, which I have already published, the bowel infected the fibroid. Yet I have not come across an instance of

[1] THE LANCET, Feb. 21st, 1903, p. 485.

obstruction even in two patients where I had to deal with troublesome intestinal adhesions connecting the parietal peritoneum with the surface of the tumour, the result of a former exploratory operation.

Lastly, in two operations for fibroid I discovered a tumour almost fixed, with a prominent lobe closely resembling in form and position the right lobe or tumour in the case which I now publish. In each instance there was a firm adhesion which, as in the present case, was situated immediately posterior to the upper limits of the tumour. In one of the two cases it was an appendix epiploica, in the other several inches of ileum that adhered to the projecting lobe. Still, though the adhesion formed an arch under which intestine might readily have become incarcerated or even strangulated neither of the two patients had ever suffered from any symptoms indicating obstruction. My experience, however, at least shows that a lobe projecting prominently upwards and widely separate from the remaining part of a more or less fixed uterine fibroid is liable to contract adhesions which in one out of three cases caused intestinal obstruction.

Granville-place, W.

## CANCER INFECTION AND CANCER RECURRENCE: A DANGER TO AVOID IN CANCER OPERATIONS.

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SURGEONS who see much of cancer cases and who are frequently called on to exercise their skill in endeavouring to relieve or to cure patients of this malady have sometimes every reason to be disappointed with the results of their efforts. Perhaps an operation both ingenious and extensive is planned and carried out, the operator taking what he considers to be every due precaution to eradicate the disease. Yet in spite of all this care the patient subsequently develops that bugbear and disappointment of all surgeons—viz., recurrence. What is the explanation of this failure? We have been taught that where recrudescence takes place after a surgical operation for cancer this misfortune is due to an inadequate operation—i.e., one where the surgeon has failed, or was unable, to cut sufficiently wide of the disease. This cannot be the only reason in all cases and therefore we must seek for another. Now, our present knowledge of cancer teaches us that the trouble begins as a primary growth, that its elements then tend to invade the tissues around this growth, spreading their way through the neighbouring lymphatic system, and infecting the nearest lymphatic glands. Therefore, any adequate operation must entail excision of the growth and the possibly infected surrounding tissues. Hence we endeavour to cut wide of the primary disease, cutting into healthy tissues some distance around the growth and, at the same time, removing possibly infected lymphatic vessels and glands. We carry out such an operation because we know that for the success of any radical surgical procedure it is necessary to remove every vestige of the growth. Therefore, if the disease recurs somewhere near, but at the same time outside, the immediate field of operation it is only natural to infer that this recurrence is due to the surgeon having failed to cut sufficiently wide of the disease.

Again, one frequently sees cancer reappear in some distant organ, without any local post-operative recurrence: for example, cancer of the liver sometimes manifests itself after excision of a cancerous breast. In a case such as this it is only very obvious that in spite of the surgeon's efforts the disease had got beyond the bounds of surgical removal at the time of excision of the primary focus of infection and the surgeon, therefore, was unable to cut sufficiently wide of the disease. However, where the disease reappears within the field of operation, this reappearance, though sometimes, yet is not always satisfactorily accounted for by the argument of inadequate operation. Such also is the fact in those cases where, after the attempted removal of cancerous tissues, the disease not only appears locally but sometimes seems to recur with increased fury and virulence, in fact, in cases such as the latter, instead of the patient being relieved by the operation, it seems as if one had stirred up a hornet's nest, the post-operative history showing the disease recurring in and around the wound with extraordinary virulence and in an alarming extent, the virulence of such recurrences sometimes being so intense as to appear almost like some inflammatory malignant disease. As an explanation, therefore, of some cases where cancer recurs within the field of operation and likewise where it recurs there with increased virulence and extent one has to seek for another cause apart from inadequate operation. It is my conviction that such a cause is satisfactorily found and explained by the process of cancer infection or accidental infection of the wound by cancer cells at the time of operation. Our whole knowledge of the disease shows how very infective is the cancer cell. In the parent growth it multiplies indefinitely, and whether it be carried by the lymph or blood streams to other parts of the body there it again displays great vitality and activity, as is manifested by giving rise to secondary growths. Therefore it is not only the cells in the parent growth which are a source of danger, but also any which escape from the same by the lymph or blood streams. This is so well recognised that all radical operations are planned and executed with a view of removing all and every fragment of cancer material, because the surgeon knows that for the success of any radical operation it is necessary to remove every vestige of the growth or vestige of infection. Should he fail to do so infection persists and recrudescence of the disease inevitably takes place.

Now, if the cells in the parent growth are such a source of cancer infection, and thereby such a source of danger that any which escape in the ordinary clinical course of the disease and become disseminated through the channels above mentioned are so capable of, and liable to, start fresh secondary cancerous growths, can there be any reason to disbelieve that cancer cells which escape at the time of operation and find their way into the open wound, are an equal source of danger? Certainly there can be no reason to disbelieve that these liberated cells are capable of becoming implanted in the wound and developing into fresh malignant growth. I am quite convinced that in carrying out radical operations for cancer this form of cancer infection is one of fairly frequent occurrence and its avoidance is therefore one of vital importance. Cancer cells may escape during operation as the result of incising or lacerating the primary growth, cutting across or tearing an infected lymphatic vessel, or even from rupture of a cancerous gland, and such cells getting into the wound are quite capable of causing, and do frequently cause, cancer recurrence. This is cancer infection, or cancer implantation, and its clinical importance with regard to the causation of cancer recurrence is, in my opinion, insufficiently recognised at the present time. I do not wish to say that many surgeons are not suspicious of or aware of this danger, but I do not believe that sufficient importance is attached to it in clinical teaching of the present time.

If one wished for further evidence as to the infectivity of the cancer cell and the readiness with which it becomes implanted one has but to look at the clinical course of the disease in the abdomen. Operators of even limited experience cannot fail to be impressed with the widespread dissemination of the disease which is so frequently found within the peritoneum. Perhaps the primary growth is in the ovary, and yet countless secondary growths of various sizes are found widely scattered over the peritoneum, both visceral and parietal, and, in fact, the dissemination of the disease may be quite as widespread as that found in peritoneal tuberculosis. The cause of this diffuse dissemination can only be explained by the fact that the cancer cell is highly infective and capable of implantation in circumstances which are perhaps particularly favourable to its growth in the abdomen. One therefore concludes that once cancer cells become parted from the parent growth and set free in the peritoneal cavity they are carried about by the movements of peristalsis, or even by the force of gravity, or perhaps their movements are aided by the presence of ascitic fluid, which is so frequently found in these cases. Thus these cells become carried from the parent growth to other parts of the peritoneum, where they become implanted, take on active growth, and cause this widespread infection. The peritoneal cavity is not the only part of the human frame which so palpably manifests the infective nature of the cancer cell, but it is the commonest. Therefore, if these cells are capable of implanting themselves wherever they happen to rest in the abdomen one can readily see that there must also be a similar proneness for liberated cells to implant themselves in an operation wound. This readiness to implantation must have a most important bearing on cancer recurrence and the success or failure of an operation. The extent of cancer infection in the peritoneum

varies in different cases, and is not always dependent on the magnitude of the parent growth, but is probably dependent on the amount of cancer cell dissemination. Sometimes large growths are met with without any apparent peritoneal infection, and this is probably explained by the fact that the cancer cells are still confined within the primary tumour and no escape has taken place. Yet, on the other hand and for the reverse reason, extensive peritoneal infection may be found with only a small primary growth, infection which in extent appears to be out of all proportion to the parent growth.

Now, once cancer cells become liberated in the abdomen there is a large cavity open to them for infective dissemination. You can compare the extent of this cavity with the extensive wound which is so frequently made in order to carry out a radical operation for cancer and the possible risks run if cancer cells are liberated at the time of doing so. Should cancer cells become implanted in an operation wound fortunately they ought not generally to cause the same widespread dissemination as is seen in the peritoneum. Once they come to rest they become fixed by blood coagulation, and, for a time, held fast by the process of healing. Moreover, they have nothing similar to peristalsis to facilitate their dissemination, nor yet a cavity full of ascitic fluid in which to float about. They ought, therefore, simply to give rise to isolated recurrences, and this they probably do; hence recurrence so frequently taking the form of nodules in and around the scar of operation wounds. On the other hand, there are some cases where, doubtless owing to extensive implantation, diffuse and widespread recurrence takes place. I am a confirmed believer in cancer infection from accidental inoculation of the wound being a common cause of the failure of many of our radical operations, and I again emphasise the fact that such a danger cannot be too carefully guarded against. Doubtless cancer infection of wounds occurs much more frequently than we imagine, but it is difficult to prove every case owing to the uncertain time recurrence takes to manifest itself. In some cases it may appear almost immediately, whereas in others it is only seen after the lapse of several years, and yet cancer cells are present all the time. The following cases which have from time to time come before my notice, chiefly at the Cancer Hospital, illustrate the points to which I wish to draw attention in connexion with the danger of cancer infection.

### A. *Cases in Connexion with Cancer of the Breast.*

CASE 1. *Widespread and rapid infection of the chest-wall, following exploratory incision of a cancerous tumour, preliminary to amputation of the breast.*—The patient was aged 46 years. A small tumour was noticed in the right breast for two months. On August 30th, 1895, an exploratory incision of considerable extent was made into the tumour and down to the pectoralis major. The tumour proved to be carcinoma, so the breast with the axillary lymphatic vessels and glands were removed *en masse*. At first a few nodules appeared, but within eight weeks the whole side of the chest in the neighbourhood of the operation wound became one diffuse mass of cuirasse cancer which ran a very rapid and virulent course.

In this case the scalpel with which the tumour was first incised was employed to carry out the complete operation and the exploratory incision was not closed to prevent the escape of cancer cells, nor were the surgeon's hands again prepared. Microscopically the growth was duct carcinoma. The post operative course of this case made a great impression on me and I was forced to believe that the large wound left after amputation of the breast had become infected with cancer cells which escaped from the exploratory incision or were carried to the wound by instruments or by my hands.

CASE 2. *Suture hole infection and cancer "en cuirasse" following amputation of a cancerous breast.*—A patient of Dr. J. Smyth, aged 57 years, was operated upon on Jan. 10th, 1905, for a tumour of six weeks' duration. An exploratory incision was made, but before carrying out amputation the exploratory wound was closed and every reasonable precaution was taken to avoid cancer infection of the amputation wound. Unfortunately, there was reason to believe that the measures which were adopted were not perfect and that there was some escape of blood from the exploratory incision during removal of the breast. Subsequently this patient developed well-marked nodules in the site of the suture holes on both sides of the lower half of the wound, and later secondary nodules appeared in the surrounding area, the whole eventually coalescing and at first forming a localised but later a diffuse cancer *en cuirasse*. This gave me the impression that the needles or suture became contaminated with cancer cells, hence the suture hole infection, and that the latter gave rise to the secondary nodules.

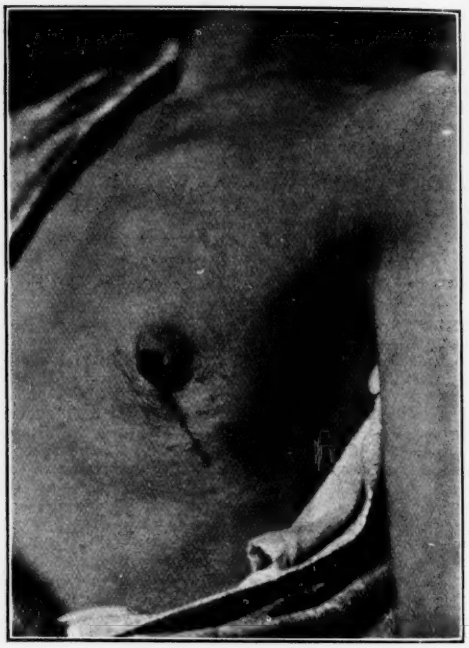
**Microscopically the growth was glandular carcinoma.**

CASE 3. *Multiple suture hole infection following excision of a mammary tumour.*—The patient, aged 39 years, had the right breast amputated by me in June, 1898, and came to the Cancer Hospital again in June, 1901, suffering from a small tumour in the left breast. One of my colleagues excised the tumour, believing it to be non-malignant, but it proved to be cancer. In May, 1902 she was seen by me and then had nodules in the site of several of the suture holes on each side of the scar in the left breast. The whole breast was therefore removed.

**Microscopically all growths proved to be glandular carcinoma.**

CASE 4. *Single suture hole infection following removal of a mammary tumour* (Fig. 1).—The patient, aged 25 years, had a tumour excised from the left breast in another hospital in December, 1906. She came to the Cancer Hospital in February, 1907, with a depressed scar radiating from the nipple. No mammary tumour could be felt but

FIG. 1.



Single suture hole infection following excision of mammary tumour. The infected suture hole is marked.

one of the suture holes proved to be the site of a well-marked nodule which convinced me that the original tumour was malignant. These suspicions were strengthened by the fact that the glands of the corresponding axilla were perceptible.

**The breast was therefore amputated and the axilla cleared and the microscopic examination later revealed the fact that the nodule in the suture hole contained evidence of duct carcinoma.**

**Cases 2, 3, and 4 speak for themselves and seem convincing proofs of the readiness with which the cancer cell can become implanted and the danger of the needle or suture being infected with cancerous material.**

CASE 5. *Diffuse nodular infection of the chest wall following attempted removal of a solitary cancerous nodule* (Fig. 2).—A woman aged 60 years, a patient of Dr. William Barkley, had the left breast removed in December, 1895 and had several subsequent operations for recurrence, the last being in July, 1901. When I saw her in May, 1906, there was a small nodule over the second costal cartilage, and it seemed to be adherent to the latter. Its removal was attempted, and thinking that a resection of a portion of rib might be necessary I turned back a semilunar-shaped flap of skin. The nodule was removed without any resection being considered necessary. Later multiple nodules appeared, some 14 in number, and they made their appearance only beneath the flap and in the line of the curved cicatrix, and nowhere else. The natural inference is that in removing the original nodule some cancer cells became liberated and thus infected the wound. These fresh nodules of infection were still confined to the same site one year after operation.

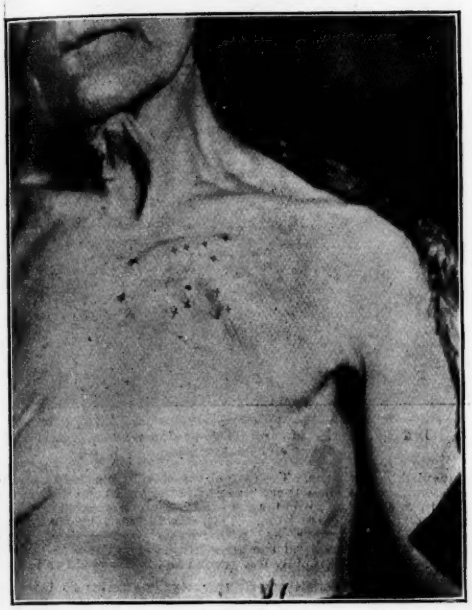
**Microscopically the growths were glandular carcinoma.**

CASE 6. *Infection of drainage-tube and suture holes after amputation of the breast* (Fig 3).—A woman, aged 49 years, a patient of Dr. L. S. McManus, had the left breast removed by me on Dec. 5th, 1906, for advanced carcinoma, and the wound was drained by a tube inserted through an opening made in the posterior axilla. Three months later she showed evidence of nodules in some of the lower suture holes, and four months after operation a well-marked cancerous nodule

appeared in the site of the drainage-tube hole. Cancer cells must have been liberated during operation in this case, either by instruments or otherwise, and caused infection of both suture and drainage-tube holes.

**Microscopically the growths were glandular carcinoma.**

FIG. 2.



Diffuse nodular infection following attempted removal of a solitary cancerous nodule. The multiple nodules are marked. The original nodule was under the middle of the flap.

CASE 7. *Infection of the clavicle following its division during removal of cancerous supra-clavicular glands.*—A woman, aged 58 years, had the right breast amputated on April 11th and some supra-clavicular glands excised on June 25th, 1906. In order to facilitate removal of the glands the clavicle was divided. After healing of the wound some thickening persisted in the clavicle, and this was believed at first to be the result of callus. About January, 1907, the bone was noticed to be considerably thicker, and it has gradually enlarged ever since, so much so that when last seen it was causing severe symptoms from pressure on the brachial nerve trunks and blood-vessels, and no other explanation can be given except that this progressive enlargement is due to cancerous deposit in the bone. As this development has taken place since the operation it leads one to believe that it undoubtedly is due to infection of the clavicle at the time of operation.

**Microscopically the growth was glandular carcinoma.**

**It is not only in association with the breast but also in other parts of the body that cancer infection has been brought before me. Perhaps in the neck more than any other part have I seen changes so frequently occur after operation which could only be explained by cancer infection. I need not mention all the cases I have seen, but will give those showing various proofs of cancer infection.**

### B. *Cases in connexion with Cancer of the Tongue, Lip, Larynx, Maxillary Antrum, and Ear.*

CASE 8. *Diffuse infection of the neck following exploration of a tumour of doubtful origin.*—Some years ago I had a middle-aged man under my care in the Cancer Hospital, but I am unable to trace his notes. He was suffering from a tumour of about the size of a Tangerine orange and situated in the anterior triangle of the neck. As there was evidence of fluctuation and some doubt existed in my own mind as to the nature of the swelling, the latter was incised, when some fluid containing much debris escaped. The cavity was vigorously curetted and some of the débris saved for microscopic examination. It proved to be an epitheliomatous growth, evidently of primary origin. The case never did well and within a few weeks of operation there was diffuse brawny thickening of the whole side of the neck. This soon broke down in several places and gave every evidence of the thickening being malignant in origin. It was a case of diffuse cancerous infection and I concluded that in using the curette I had opened up fresh channels for infection.

CASE 9. *Diffuse infection following incision and curettage of breaking-down cancerous glands.*—A patient, aged 45 years, had the tongue removed in March 1904 for epithelioma. In January, 1905, he was re-admitted into the hospital with a swelling on the left side of the neck. The short history and presence of fluctuation made me disbelieve it to be malignant, so it was incised, curetted, and drained. The swelling proved to be breaking-down epitheliomatous glands, and diffuse and rapid cancerous infection of the whole side of the neck followed operation. The condition became similar to Case 8, and followed an identical course, doubtless due to the same cause.

**Microscopically the growth was epithelioma.**

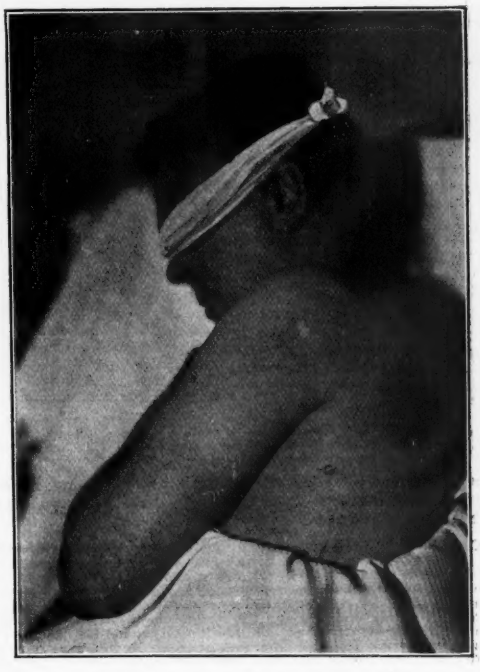
CASE 10. *Diffuse infection of the neck and floor of the mouth after excision of the tongue and removal of the submaxillary glands.*—A patient, aged 55 years, was admitted to the Cancer Hospital in August, 1898, suffering from epithelioma of the tongue. The tongue was quite moveable, there was no evidence of implication of the floor of the mouth, but some enlarged glands could be felt in the left submaxillary region. On August 23rd the tongue was excised and the enlarged glands were removed. The wound in the neck did not progress satisfactorily from the first, and four weeks after operation there was evidence of marked diffuse cancer infection, not only in the submaxillary wound, but extending through the floor of the mouth. This somewhat surprised me, as it was an unusual course for the disease to run, and I could only conclude that in removing the glands from the submaxillary region one of them must have burst, thus liberating cancer cells into the wound and thereby setting up this serious infection.

**Microscopically the growth proved to be epithelioma.**

CASE 11. *Extensive and rapidly fatal infection of the neck from removal of epitheliomatous glands.*—A patient, aged 59 years had the left half of the tongue removed for epithelioma in March, 1898. On July 2nd, some enlarged glands were removed from the left side of the neck, and they were ruptured during removal. On July 12th there was a suspicious thickening of the skin and deeper tissues at the site of operation. This had spread extensively, showing well-marked cancerous infection of the neck wound on August 2nd, by which date the disease was extensively broken down. The trouble ran a very rapid course, the whole wound opening up, revealing an enormous cavity, and the patient died from the disease on Oct. 27th, 1898.

**Microscopically the growth was epithelioma.**

FIG. 3.



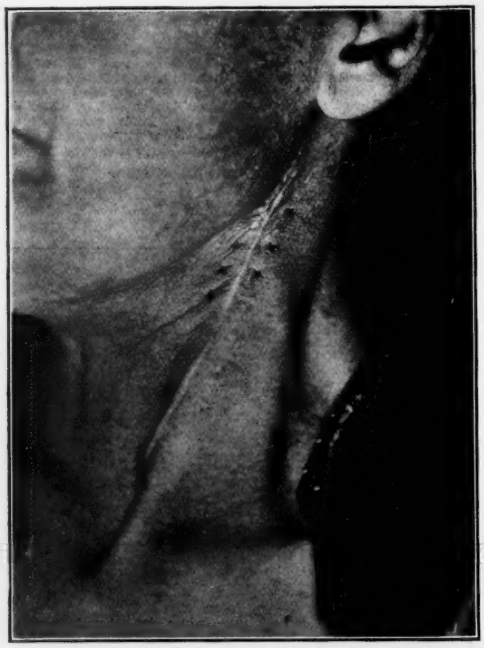
Infection of drainage-tube hole after amputation of cancerous breast.

CASE 12. *Suture-hole infection of the neck following removal of epitheliomatous glands* (Fig. 4.—The patient, aged 39 years had excision of the tongue carried out for epithelioma on August 2nd, 1906. On Nov. 26th enlarged cervical glands were removed on both sides, the operation presenting some difficulties owing to the adherence of the glands to the carotid sheath. In fact, I was somewhat suspicious that cancer cells might have been liberated during operation. The wounds healed perfectly. Two months after there were nodules in the site of the suture holes on both sides of the neck but chiefly on the left. On the right side there were four suture holes infected, two on each side of the incision and exactly opposite one another. On carefully examining them I noticed that the two outer nodules were on the surface and the two on the other side of the incision were in the deeper layers of the skin. It appeared as if the needle or suture infected the superficial layer of the skin as it passed through and then picked up fresh infection in the wound and brought this to the deeper layers of the skin on the opposite side.

CASE 13.—*Rapid infection of structures of the neck after exploration of carcinoma of the larynx.*—The patient, aged 33 years, had been suffering from hoarseness for some months. She was seen by Sir Felix Semon and Mr Richard Lake, and an intra-laryngeal swelling was noticed in the neighbourhood of the left arytenoid cartilage but there seemed some doubt as to whether the trouble was tubercle or carcinoma. On March 30th, 1900, the larynx was explored through an incision on the left of the neck and a small quantity of some soft breaking-down material was met with. As much as possible was removed by the curette. The wound in the neck refused to heal and very soon gave evidence of being infected with carcinoma, eventually fungating and breaking down, the neighbouring structures becoming implicated for some distance round. In two weeks tracheotomy was necessary and owing to the invasion of the œsophagus gastrostomy became an absolute necessity and was performed four weeks after the primary exploration. The patient succumbed to the disease in four months as a result of hæmorrhage from a huge cavity in the neck.

**Microscopically the growth was carcinoma. This was apparently an early case of carcinoma, and I have no doubt**

FIG. 4.



Suture-hole infection following removal of epitheliomatous glands of the neck. The infected suture holes are blackened.

**that cancerous infection of the exploratory incision, aggravated by the curettage, was the cause of its rapid and somewhat unusual progress.**

CASE 14. *Rapid and extensive infection of the neck following removal of glands secondary to epithelioma of the lip.*—The patient, aged 55 years, under the care of Dr. McManus and Dr. H. C Sturdy, was admitted into the Cancer Hospital in May, 1906, suffering from epithelioma of the left portion of the lower lip, with some enlarged glands in the left submaxillary region. The epithelioma of the lip was excised and the glands were removed, but unfortunately one of the latter burst during removal. The operation took place on May 2nd, yet on the 29th diffuse recurrence was well developed in the site of the submaxillary and cervical incisions and was even fungating. The disease spread rapidly and five weeks after operation the whole left side of the neck was involved in a breaking-down growth. An interesting point in this case was the fact that the man was seen by me five years previously and operation was then recommended, but he preferred to wait. This shows the chronic nature of the growth, and it is my opinion that owing to rupture of a breaking-down gland at the time of operation the diffuse and rapid carcinomatous outbreak was brought about by cancerous infection of the wound. This patient died on August 16th, 1906.

**Microscopically the growth was epithelioma.**

CASE 15. *Virulent infection of the parotid region following removal of a gland secondary to epithelioma of the ear* (Fig. 5).—A man, aged 48 years, a patient of Dr. R. Hugh Hodgson, was admitted to the Cancer Hospital in April, 1907, suffering from epithelioma of the ear and an enlarged gland in the parotid region. Operation was carried out on April 17th, the epithelioma of the ear being excised without difficulty but the enlarged gland at the angle of the jaw burst during removal. The wound in the neck did not heal satisfactorily and the patient left hospital on April 21st with some redness of the wound,

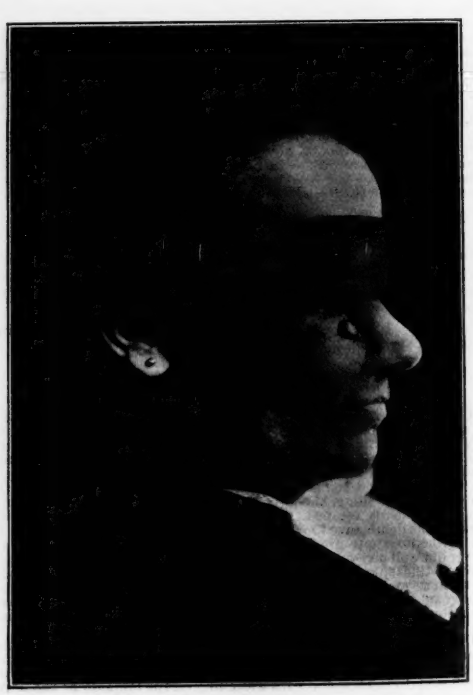
FIG. 5.

Diffuse infection of parotid region after removal of an epitheliomatous gland.

accompanied by discharge. The patient was seen by me again a month after operation and then there was great swelling in and around the wound in the neck, with brawny induration and breaking-down growth in the line of incision. This was followed by severe and repeated attacks of hæmorrhage, with further breaking down of the swelling. For the details of the after history I am indebted to Dr. Hodgson. The patient rapidly lost ground and is now confined to bed.

**The post-operative history of the case is similar to Case 14 and I have no reason to assign the cause of the virulent infection of the wound to anything but rupture of the gland during removal. Prior to this accident the case ran a very**

FIG. 6.



Nodule of infection in cicatrix of face following removal of superior maxilla.

chronic course, as the patient first noticed the growth in the ear in 1901.

CASE 16. *Nodule of cancer infection in a cicatrix of the face following removal of the superior maxilla* (Fig. 6).—The patient, aged 43 years, had the right superior maxilla removed on June 9th, 1906, for epithelioma of the maxilla. The operation was performed by turning back a flap of the soft structures of the face, making an incision following the lower margin of the orbit and inner margin of the nose, and dividing the upper lip. The wound healed well, but four months after operation a nodule appeared in the middle of the cicatrix of the face, and this gradually enlarged. The original growth of the maxilla was present at least two months before operation, beginning in the antrum and affecting the posterior portion of the maxilla. The soft structures of the face were, apparently, quite free from any sign of being implicated in the growth at the time of operation.

**This case was probably a direct implantation of cancer cells on to the soft structures of the facial flap. Eight months after operation recurrence took place in the neighbourhood of the right half of the palate. Microscopically the growth was epithelioma.**

### C. *Carcinoma of the Rectum.*

CASE 17. *Diffuse infection following excision of the rectum.*—The patient, aged 50 years, had transacral excision of the rectum performed for cancer in February, 1905. The diseased portion of the bowel became torn during operation and its removal was effected with difficulty. Two months afterwards there was marked stenosis of the sacral anus, and on examination the stenosis extended for several inches up the bowel, which latter was surrounded by what proved to be diffuse carcinomatous infection, as if the bowel were imbedded in plaster of Paris. This became rapidly worse, necessitating colotomy, and the patient succumbed to the disease five months after operation. My opinion is that cancer cells were liberated at the time of rupture of the growth and that they caused this peculiar and unusual diffuse infection.

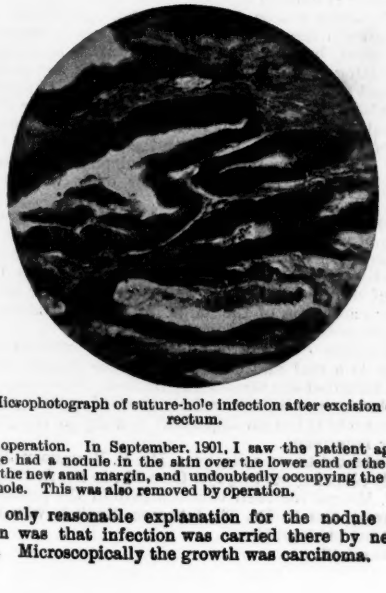
**Microscopically the growth was glandular carcinoma.**

CASE 18. *Localised infection of the wound following transacral excision of the rectum for cancer.*—A patient of Dr. T. F. Devane, aged 64 years, had transacral excision of the rectum carried out in August, 1905, and again the disease was torn during removal. Although the growth was from 3½ to 4 inches from the anus, circumstances deemed it inadvisable to perform end-to-end anastomosis, so a sacral anus was made and the lower segment of gut was excised down to, and including, the original anus. Although the lower 3½ inches of the rectum which were excised were quite healthy, yet when I saw the patient again, in May, 1906, recurrence had taken place and was breaking down in the line following the cicatrix of the lower portion of the wound where the excised rectum was quite healthy. The other part of the wound and the sacral anus were free from disease.

**I had drained the operation wound by means of a tube passed up though the site of the original anus and lower rectum and my only explanation for recurrence occurring in this situation was that it was owing to cancer infection of the wound.**

CASE 19. *Suture-hole infection following excision of the rectum* (Fig. 7).—A patient of Dr. R. S. Dickson, aged 32 years, had transacral excision of the rectum performed by me in December, 1900, a sacral anus being made. In this case the growth was much lacerated at the

FIG. 7.



Microphotograph of suture-hole infection after excision of rectum.

time of operation. In September, 1901, I saw the patient again and then she had a nodule in the skin over the lower end of the sacrum, close to the new anal margin, and undoubtedly occupying the site of a suture hole. This was also removed by operation.

**The only reasonable explanation for the nodule in this position was that infection was carried there by needle or suture. Microscopically the growth was carcinoma.**

### D. *Cancer in the Abdomen.*

**Some years ago I came across a patient suffering from a fungating growth in the right iliac fossa. It appeared to me somewhat unusual, and on going into his history I found that he had exploratory laparotomy carried out for what was diagnosed as appendicitis but that something different was found and the wound was closed without anything further being done. Up to that date I had never seen an intra-abdominal growth fungate externally. He said that the wound healed perfectly at first but later broke down and fungated. In the light of subsequent experience I have no doubt that this was a case of carcinoma in or about the cæcum and infection of the abdominal wound took place during the exploratory operation, thus accounting for the fungating growth that was present when I first saw the patient.**

CASE 20. *Infection of laparotomy wound after ileo-colostomy for carcinoma of the cæcum.*—The patient, aged 66 years, had the abdomen opened in the right semilunar line on May 3rd, 1904, when carcinoma of the cæcum was found. The disease was too far advanced for radical operation, though an attempt was made to remove it. On account of symptoms of intestinal obstruction ileo-colostomy was carried out. The abdominal incision never looked satisfactory after operation, and almost immediately began to discharge a semi-purulent fluid. This was followed by induration in and about the wound, which broke down and showed every evidence of malignant infection, the disease rapidly forcing its way externally. Eventually a fæcal fistula developed, the patient went gradually downhill, and died on June 20th of the same year.

**Microscopically the growth was carcinoma.**

CASE 21. *Infection of abdominal wound following exploratory laparotomy for carcinoma of the cæcum.*—The patient, aged 29 years, had exploratory laparotomy carried out in the Cancer Hospital on June 13th, 1906. The abdomen was opened in the middle line and, after separating adhesions, inoperable cancer of the cæcum was found, so the wound was closed again, one layer of through and through sutures being used. This case followed much the same course as Case 20, a fæcal fistula developing in less than a month and the patient succumbing to the disease on Nov. 20th.

**Microscopically the growth was carcinoma.**

FIG. 8.

Microphotograph of section of nodule of infection in laparotomy wound following exploration of carcinoma of sigmoid flexure.

**These two cases are somewhat similar in the position and nature of the growth and also in the post-operative history, although the abdomen was opened in a different place in each case. The laparotomy wound became the site of carcinoma, and I cannot find any explanation for this unless it were brought about by cancer infection. In Case 21 I was very suspicious that the infection began in the site of the sutures.**

CASE 22 *Nodular infection of laparotomy wound following exploration in cancer of the rectum.*—A patient of Dr. McManus, aged 32 years, had laparotomy performed by a mesial incision on March 31st, 1903, when an inoperable growth of the upper rectum was found. In March, 1904, he was readmitted into the Cancer Hospital and had inguinal colotomy carried out. At this time it was noticed that he had a series of nodules in the original laparotomy cicatrix, and they appeared to have arisen in the site of the sutures. I am practically certain from the nature of these nodules that they were carcinomatous and that they arose as the result of cancer infection of the wound. The patient died at home some time afterwards and unfortunately no microscopic examination was made in this case, though all the clinical features were diagnostic of carcinoma.

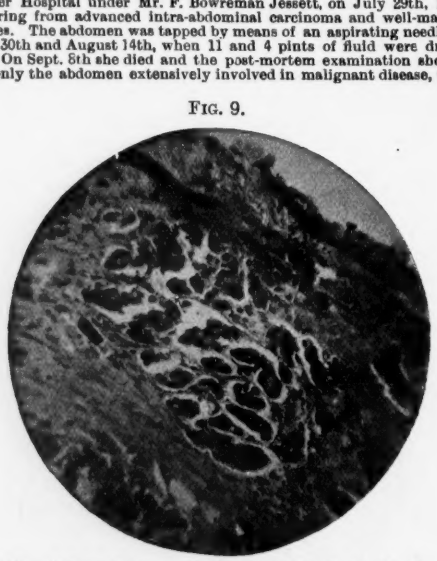
CASE 23. *Nodular infection of laparotomy wound in carcinoma of the sigmoid flexure* (Fig. 8).—A female, aged 26 years, a patient of Mr. E. J.

Pritchard, was operated on in the Bolingbroke Hospital in December, 1905, for recurring attacks of appendicitis. The abdomen was opened in the right iliac fossa and the appendix was found adherent to a cancerous growth implicating the sigmoid flexure. The appendix was removed, but it was found impossible to excise the growth, so ileo-sigmoidostomy was carried out to obviate the possibility of future intestinal obstruction. In December, 1906, a nodule was noticed deep in the abdominal cicatrix, and I found a second present in January, 1907. The patient died in May, 1907, and I am indebted to Mr. Pritchard for kindly securing one of the nodules for microscopic examination. This was examined in the pathological department of the Cancer Hospital, and was reported as being a cancerous nodule, secondary to carcinoma of large intestine.

In Cases 21, 22, and 23 cancer cells must have been liberated during manipulation of the growth and carried to the abdominal incision by the instruments, suture, or surgeon's hands. In Case 21 infection had only to be carried from the cæcum to the wound immediately over the growth. In Case 22 it was carried from the cæcum to a mid-abdominal incision, and in Case 23 the infection was conveyed from the left side of the pelvis to an incision in the right iliac fossa.

CASE 24. *Infection of needle-hole following tapping for cancerous ascites* (Fig 9).—The patient, aged 56 years, was admitted into the Cancer Hospital under Mr. F. Bowreman Jessett, on July 29th, 1906, suffering from advanced intra-abdominal carcinoma and well-marked ascites. The abdomen was tapped by means of an aspirating needle on July 30th and August 14th, when 11 and 4 pints of fluid were drawn off. On Sept. 8th she died and the post-mortem examination showed not only the abdomen extensively involved in malignant disease, with

FIG. 9.



Microphotograph of nodule of infection following tapping for cancerous ascites.

diffuse infection of peritoneum, but the pericardium and pleuræ were also involved. It was impossible to say where the disease primarily began. In the abdominal wall were two nodules of growth, microscopically of the same variety of carcinoma as that found in the abdomen, and, moreover, these nodules were at the exact spots of puncture where the abdomen was tapped.

I have mentioned how readily cancer infection takes place in the abdomen, but this case also demonstrates how the infection can sometimes be conveyed outside the abdomen.

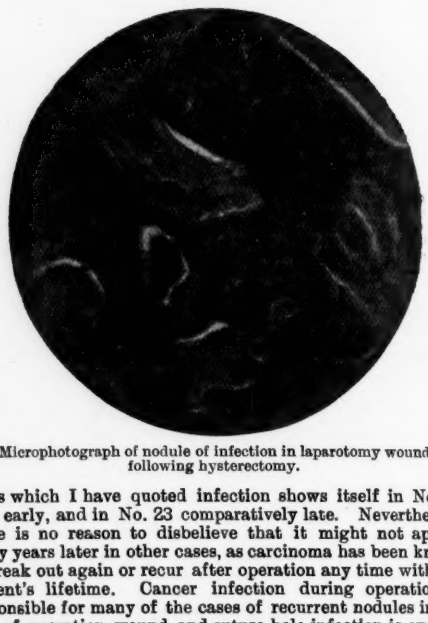
CASE 25. *Nodular infection of laparotomy wound following abdominal hysterectomy for carcinoma* (Fig. 10).—The patient was a female, aged 40 years. Abdominal hysterectomy for carcinoma of the uterus was performed in the Cancer Hospital on March 28th, 1899. She was readmitted in May, 1900, suffering from symptoms of intestinal obstruction, and then it was noticed that there was a nodule of the size of a large filbert situated in the abdominal scar. Left inguinal colotomy was performed and the nodule was excised for microscopic examination. At the same time the posterior surface of the scar was examined. No adhesions were found nor were any other nodules present. In carrying out abdominal hysterectomy unfortunately the uterus was torn across at its junction with the cervix, and it is my belief that it was mainly through this accident that cancer cells were liberated and thus caused infection of the laparotomy wound.

Microscopically the nodule in the abdominal scar was identical with the original growth in the uterus.

## CONCLUSIONS.

As the result of my observations on the above cases and not only on these but many others which I have refrained from quoting in order to avoid going over the same ground I have concluded that carcinoma is a highly infectious disease. Not that there is any evidence to support the fact of its communicability between one person and another but that once an individual becomes the subject of cancer there is not only the liability of it spreading by a well-defined infective process, but also in those cases where the surgeon attempts to remove the disease there is a risk of reinfecting his patient from the growth which he is endeavouring to remove. Cancerous infection of wounds is therefore of comparatively frequent occurrence, more frequent than is shown by my own experience, but unless the infection manifests itself fairly early the proof is easily overlooked. In the

FIG. 10.



Microphotograph of nodule of infection in laparotomy wound following hysterectomy.

cases which I have quoted infection shows itself in No. 24 very early, and in No. 23 comparatively late. Nevertheless, there is no reason to disbelieve that it might not appear many years later in other cases, as carcinoma has been known to break out again or recur after operation any time within a patient's lifetime. Cancer infection during operation is responsible for many of the cases of recurrent nodules in the site of operation wound and suture-hole infection is exceedingly common. In fact, a patient who came under my treatment quite recently asked me why it was that the disease always seemed to come back in the site of the stitches. Even she had noticed this peculiarity of the disease.

Cancer infection is also responsible for diffuse recurrent carcinoma taking place in operation wounds and especially in those cases where a general flare-up occurs after interference with a cancer growth. In fact, I regard cancer infection as the reason why chronic carcinomatous growths so frequently run a very acute course after attempted operations. In the parent growth the cells are, more or less, encapsuled in fibrous tissue, but some cells escape during operation and find a resting place in the wound which is comparatively unprepared to meet and to resist the invasion. Cancer infection is also responsible for the unusual behaviour of some abdominal wounds after operation and is nearly always the cause of unexpected post-operative abdominal fistulæ, whether gastric or intestinal, developing after a cancerous growth has been explored or dealt with in some way.

Finally, as conclusive evidence of the reality of cancerous infection of wounds, can one desire anything further than the clinical evidence of the intra-abdominal spread of carcinoma, combined with the post-operative history of cases I have quoted of diffuse infection of the wound, nodular infection following carcinoma of the large intestine and uterus, and needle-hole infection following tapping?

The question of cancerous infection of wounds during operation is a real and exceedingly grave danger and one which I regard of the utmost importance. Moreover, it is a danger that cannot be too carefully guarded against and any failure to avoid it has an important bearing on the question of cancer recurrence.

I am indebted to my colleagues, Mr. F. Bowreman Jessett, for kindly allowing me to quote Case 24; to Dr. A. Paine and Dr. D. J. Morgan for their valuable help in the pathological department; and to Dr. T. Johnston English who kindly prepared the photographs.

Harley-street, W.

# SOME CASES OF VERNAL CATARRH.

BY T. HARRISON BUTLER, M.D. OXON.,

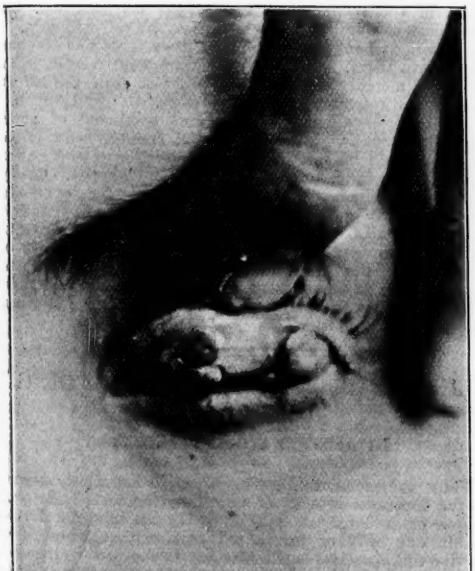
HONORARY OPHTHALMIC SURGEON TO THE COVENTRY AND WARWICKSHIRE HOSPITAL; LATE ASSISTANT SURGEON TO THE BRITISH OPHTHALMIC HOSPITAL, JERUSALEM.

SPRING catarrh is not uncommon in Palestine and Syria if care be taken to differentiate it from those types of trachoma which simulate it. In some cases, especially if the disease be confined to the lids, the differential diagnosis may present some difficulty. The enormously hypertrophied papillæ seen in some severe cases of untreated and neglected trachoma may by mutual pressure show the same polyhedral basalt-like appearance which is so characteristic of vernal catarrh. The trachomatous lid is, however, more congested and the swollen papillæ are red and bleed easily. In vernal catarrh the granular elevations are pink rather than red and they are very hard. The pannus which is so constantly associated with these severe cases of trachoma is entirely unlike the corneal lesions of spring catarrh. In many cases the two diseases coexist and so increase the difficulties of diagnosis.

I have selected the following four cases from those which came under my care at the British Ophthalmic Hospital as typical of the disease in Syria and the East.

CASE 1.—The patient, an Arab, aged 16 years, a native of Beyrût, came under my care in June, 1906, suffering from spring catarrh in a very severe form. His history, which was attested by letters from the medical men who had attended him, was as follows. The disease commenced eight years ago as "trachoma" with "pannus" and "keratitis." It had steadily increased in severity. The condition was worse in summer than in winter. No relatives were similarly affected. The boy had been treated internally with cod-liver oil, iron, and arsenic. The lids had been painted with silver nitrate, with solutions of sublimate of mercury, and with "free iodine." They had been rubbed with solid copper sulphate. The patient had used ointments containing ichthyol, yellow oxide of mercury, dionine, and cocaine. He had been treated with adrenalin in a strength of 1 in 1000. The lids had been exposed to the "vapour of calomel," they had undergone "brossage," and had been cauterised with the actual cautery. The redundant growths had been removed with scissors and peritomy had been performed. In short, during a period of eight years the patient had undergone every known form of treatment, and, far from improving, had steadily got worse.

FIG. 1.



Showing growths on inner side of upper eyelid.

The patient's condition on admission was as follows. He was an unhealthy looking boy of a decidedly lymphatic type. He had well-marked bilateral ptosis. Both upper lids were covered by large pedunculated flat growths, which are shown in the photograph of the everted lid here reproduced. (Fig. 1.) Between these large masses the lids showed the tessellated granulations typical of the disease. The upper lids were much thickened and the conjunctiva felt hard and gritty. The peripheral part of each cornea was covered by a mass of jelly-like tissue which formed a ring round the cornea. At the corneal margin it was raised some two millimetres from the general corneal level and it shelved down towards the central portion of the cornea and centrifugally into the ocular conjunctiva, which was thickened and opaque looking. (Fig. 2.) The central part of the cornea was faintly nebulous. The corneal growth was a pinky-white colour. There were very little conjunctival injection and no circumcorneal injection. There were at times some lacrymation and photophobia. V.R. = $\frac{6}{36}$; not improved. V.L. = $\frac{6}{36}$; not improved. The patient was admitted to the British Ophthalmic Hospital and anæsthetised with ether. The large growths were excised with scissors and the lids were well scraped with a Volkmann's spoon. The granulations were hard and grated like fibro-cartilage. On the next day there was no reaction and he complained of no pain.

FIG. 2.

Showing swelling of conjunctiva.

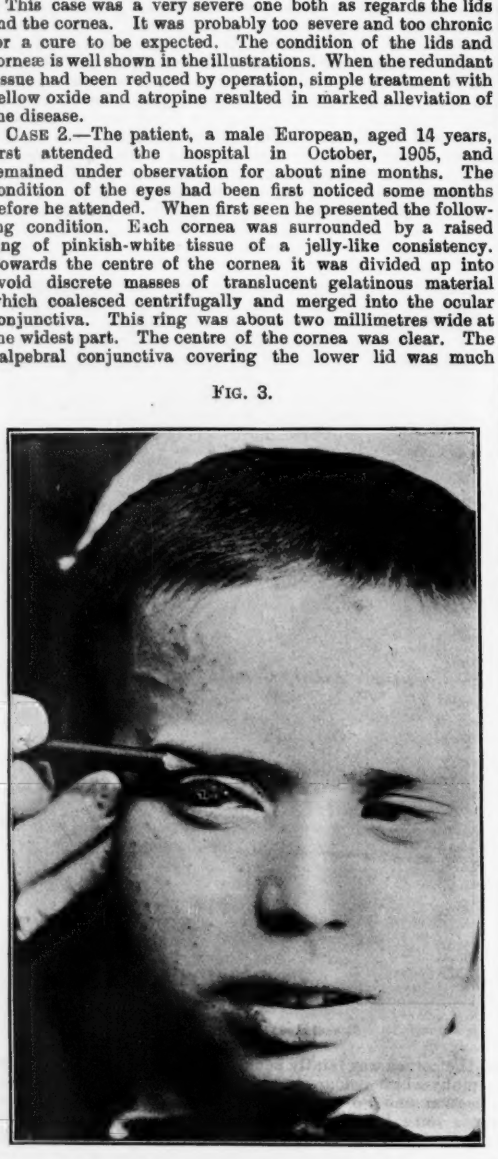
The patient remained in hospital for 14 days. Every day an ointment was massaged into the lids morning and evening having the following composition: Hydrargyri oxidi flavi, 0·05 gramme; atropine sulphate, 0·05 gramme; and yellow vaseline, 5 grammes. On leaving the hospital the patient's condition was very much improved. The pericorneal growth at first much elevated and pink had greatly subsided. It was

no longer pink but whitish. It was not jelly-like and elevated but firm, cicatricial, and but slightly raised above the general corneal surface. There was less ptosis and he felt much more comfortable. The patient was kept under observation for some time and returned home much benefited. As an out-patient he used the following prescription with much advantage as an ointment: Hydrargyri oxidi flavi, 0·05 gramme; dionine, 0·05 gramme; and yellow vaseline, 5 grammes.

This case was a very severe one both as regards the lids and the cornea. It was probably too severe and too chronic for a cure to be expected. The condition of the lids and corneæ is well shown in the illustrations. When the redundant tissue had been reduced by operation, simple treatment with yellow oxide and atropine resulted in marked alleviation of the disease.

CASE 2.—The patient, a male European, aged 14 years, first attended the hospital in October, 1905, and remained under observation for about nine months. The condition of the eyes had been first noticed some months before he attended. When first seen he presented the following condition. Each cornea was surrounded by a raised ring of pinkish-white tissue of a jelly-like consistency. Towards the centre of the cornea it was divided up into ovoid discrete masses of translucent gelatinous material which coalesced centrifugally and merged into the ocular conjunctiva. This ring was about two millimetres wide at the widest part. The centre of the cornea was clear. The palpebral conjunctiva covering the lower lid was much

FIG. 3.



Showing flattened raspberry-like growth.

thickened and swollen. This thickening was continuous with a nodular thickened mass in the ocular conjunctiva and the lower cul-de-sac. This mass again merged into the pericorneal growth. The upper lids were thickened and the conjunctiva was congested and hard. It showed a fine tessellation but unless careful inspection was made this was not very obvious. There was on the right upper lid a flat sessile growth about three millimetres across. The patient complained of no subjective symptoms and the conjunctivæ were not injected. He was treated with 1 per cent. yellow oxide ointment well massaged in three times a day. After nine months of this treatment there was a very marked improvement. The pericorneal growth of the right eye had almost disappeared and the growth on the right lid could not be seen. A photograph taken at the end of nine months of treatment shows the pericorneal thickening and the nodular thickened condition of the conjunctiva. The localised thickening, now much less than formerly, can also be made out. In this case the stress of the disease fell upon the corneæ, the lids not being much affected.

CASE 3.—The patient, aged 11 years, was first seen in July, 1906. He was brought by his mother because his eyes were red. No history could be obtained of the condition being worse in summer nor did his mother know how long the disease had existed. Both upper lids were covered by large, hard granulations roughly hexagonal in shape. These are well shown in the reproduced photograph of the everted lid. (Fig. 3.) Each cornea was surrounded by a very faint jelly-like ring of raised tissue, but it was so faint that were the lids not so typically affected it might easily be overlooked. The ocular conjunctivæ appeared to be normal. There was no injection of the conjunctivæ, but some lacrymation and photophobia were present. This case was treated for some time with the yellow oxide ointment combined with atropine. At the end of two months the condition was unchanged. The parents were averse to operative measures. In this patient the lids were severely affected, the cornea hardly at all.

CASE 4.—The first three cases were all in young boys, but Case 4 was that of an adult Arab, aged 40 years, who came up for treatment in 1904. The left upper lid was covered with large cubical granulations arranged in short thick columns like a basaltic formation. Each cube was about 1·5 millimetres square. The appearance of the lid was very similar to that of Case 3, but the granulations were larger and deeper (more raised from the tarsus). The granulations were very hard and gritty to the touch. There was a large staphyloma involving nearly the whole of the cornea; the right cornea was nebulous. There was no typical affection of the cornea. The patient came to the hospital complaining more of the staphyloma than of the lid condition. The granulations were expressed with Knapp's roller forceps, but they were so hard and tough that great force was necessary to remove them. The lids were then treated with yellow oxide of mercury ointment. When last seen the lid was smooth and resembled a tiled pavement.

My experience has been that the treatment of spring catarrh is most unsatisfactory. I think that any pedunculated growth should be removed with scissors, large granulations with Knapp's roller forceps and Volkmann's spoon. Grady's forceps, excellent as the instrument is for expressing trachoma, will have little effect on the tough tissues in vernal catarrh. Such treatment, followed by the yellow oxide of mercury ointment well massaged in, has in my hands yielded the best results. I believe that copper sulphate does harm. At the present time I have a mild case under treatment with adrenalin which appears to me to have improved the condition.

## CLINICAL OBSERVATIONS ON THE ORIGIN OF FEVER.[1]

BY ARNOLD LORAND, M.D. VIEN.

FROM the moment of our birth we are constantly exposed to the incessant attacks of uncounted bacteria and to the effects of a large amount of poisonous material formed within our body or introduced from without, and if we survive this ceaseless battle it is due to the powerful weapon we possess in the internal secretion of the ductless glands, especially of the thyroid gland. That this gland possesses very energetic antitoxic properties can be shown by the fact that when it is extirpated animals or persons very readily acquire infectious diseases of all sorts. Thus, the late Professor Charrin (1) of Paris showed several years ago how readily dogs that have lost their thyroid succumb to all possible infections. Professor W. S. Greenfield (2) of Edinburgh has found that persons suffering from myxœdema (athyroidia) very often die from tuberculosis, and Professor Pel (3) of Amsterdam found a great frequency of tuberculosis

[1] The parenthetical numbers throughout the article refer to the bibliography at the end.

in the families of myxœdematous persons. This may be in connexion with the fact shown by Professor G. R. Murray (4) that the properties of the thyroid can be inherited.

As I showed at the last Congress of Tuberculosis in Paris (1905), tuberculosis is especially frequent as a sequel to any process deleterious to the thyroid gland, as after the puerperium, especially with prolongated lactation; after sexual excesses, as there is a relation between the sexual glands and the thyroid; after various infectious diseases; after rapid growth in puberty, due to hyperactivity of the thyroid which influences the growth of the body; after severe diabetes due to exhaustion of the thyroid; and after previous hyperactivity in chronic alcoholism due to the action of alcohol upon the thyroid (5). On the other hand, all those agencies which excite thyroid activity may be a preventive against tuberculosis, such as raw meat (6) (7) (8) and milk. It is very probable that milk contains the internal secretion of the thyroid (9) (10) (11). This may also be shown by the fact that iodine, the main element of the thyroid gland, can reach the infant through the mother's milk and also by the observation that infants suffering from congenital myxœdema only begin to show the first symptoms of this condition after they have been weaned and never before. The iodine of the thyroid is contained in the colloid substance of the gland, and as infants and young animals have very little colloid substance as a rule, they receive the elements of thyroid secretion and also iodine through their mother's milk. Boiling the milk may thus deprive it of several important ferments and will make a "dead milk" out of a "living" one. If it be true that milk has a bactericidal action this will only hold good for fresh milk, as is the case with blood serum.

The thyroid protects us against poisons of different origin, such as the products of decomposition of protein food. This fact is shown by the experiments of Dr. Leo Breisacher of Detroit (6), formerly assistant of the late Professor Munk of Berlin, and from those of Dr. Blum (7) of Frankfort. The experimental results of Dr. Chalmers Watson (8), showing alteration of the thyroid in certain animals after an exclusive diet of raw meat, and those of Dr. D. Forsyth (12) concerning the pituitary body in some animals, may be in connexion with this fact. As is well known, the thyroid and pituitary body stand in very close relationship. Galeotti and Lindemann (13), in 1897, have also shown that the products of decomposition of meat produce an increase of the colloid substance of the thyroid.

The antitoxic properties of the thyroid against different products is also shown by the observations of Lanz (14) and Walter Edmunds (15), who have found that animals without thyroid resist narcosis badly, and, as I have shown in a communication to the Paris Biological Society (16), chloroform, like alcohol, produces a condition of hyperactivity in the thyroid gland, which results also in an excited mental condition. The observation that cases of Graves's disease and of severe diabetes cannot stand narcosis may be related to this fact.

It has been shown recently by Hunt (17) that the thyroid protects us against poisons like acetonitril and that iodine acts through the thyroid. Garnier (18) of Paris has found that certain chemical products, such as iodine, produce great alterations in the thyroid. As is well known, cases of Graves's disease (hyperthyroidia) have been observed after iodine treatment. The following observations make it appear probable that the thyroid may also play a protective rôle against infectious diseases. This may already be considered proved by the fact that, as Roger and Garnier (19), Crispin (20), Torre (21), Bayon 22) of Würzburg, de Quervain, and others have found, the thyroid is, as a rule, altered in infectious diseases. As Roger and Garnier (19) have shown by a series of investigations confirmed by the above-named authors, the thyroid shows in acute infectious diseases with fever an increased activity with enlargement of the folliculi, which are filled with a large quantity of colloid substance which may even enter into the adjacent lymphatic spaces. However, this hyperactivity of the thyroid gland may be followed by its exhaustion and thus after a certain duration of high fever there may be no colloid substance at all in the folliculi.

It is only logical to suppose that to anatomo-pathological alterations of the thyroid, indicating a condition of hyperactivity, there must be corresponding clinical symptoms and that these must necessarily be similar to those found in another condition of hyperactivity of the thyroid gland—i.e., in Graves's disease, the condition of hyperthyroidia "κατ' ἐξοχήν." And indeed this is so, for, as I shall try to show, fever and Graves's disease have similar clinical symptoms. Thus their most typical symptom is the same: tachycardia or increased frequency of the pulse, without which no case of Graves's disease should be diagnosed. There is a sensation of heat in most of the cases of Graves's disease and the temperature sometimes reaches a dangerous degree in fully developed cases of this disorder. Thirst, frequent in fever, is also a frequent symptom in Graves's disease (polydipsia in 14 out of 59 cases recorded by Albert Kocher (23)), and can also be produced by thyroid feeding (Lanz (24), Georgiewski (23)), and others. After a certain duration of fever further symptoms of an increased activity of the thyroid appear, such as abundant perspiration—a typical feature of Graves's disease. Vaso-dilatation and excessive perspiration can also be produced by thyroid feeding. The latter symptom of fever is a device by which nature tries to eliminate toxic products, and accordingly there generally follow upon it a fall in the temperature and an amelioration of the symptoms of fever. The diarrhœa which we find in some infectious diseases, like that of typhoid fever, trypanosomiasis, &c., is also a typical symptom in Graves's disease. When the fever subsides there appears another typical symptom of this condition, polyuria. To complete this analogy I may mention toxic decomposition of proteins, diminution in the body weight, great muscular weakness, and increased elimination of urea and uric acid as typical symptoms of both conditions. As in Graves's disease, there is also in fever an augmentation of the processes of oxidation. Glycosuria is frequent in both conditions and acetonuria may occur in fever and also in Graves's disease. Glycosuria and diabetes in consequence of infectious diseases are, as I have shown in a paper read before the London Pathological Society (26) probably due to the increased activity of the thyroid, and their disappearance occasionally after a high fever may be ascribed to the exhaustion of the thyroid after a previous hyperactivity. We know that a condition of Graves's disease may be followed by a myxœdematous condition in which, as I have shown previously, glycosuria is very rare. In the few hitherto published cases there was no complete myxœdema.

Both in Graves's disease and fever there is an augmentation of the processes of oxidation. After convalescence, however, oxidation may be diminished, and this explains, as I have shown at the French Congress of Medicine in 1904 (27), why obesity so frequently occurs after infectious diseases on the basis of degenerative changes of the thyroid, which governs oxidation: during the course of infectious disease with fever increased activity of the thyroid and loss of weight occur, and these are followed by exhaustion of thyroid activity and obesity.

The conditions of delirium and maniacal exaltation in cases of high fever are analogous to the condition of mental exaltation that may occur in Graves's disease. According to the late Moebius (28), in cases of Graves's disease there are sometimes symptoms like those of alcoholic intoxication due to the toxins of the thyroid. I believe that the mental exaltation in chloroform narcosis and alcoholic intoxication stands in relation with the action of these drugs upon the thyroid. That alcohol acts upon the thyroid has been shown by de Quervain (5), Hertoghe (29), and others.

Cutaneous eruptions may occur in fever or in Graves's disease. In the same way as in many skin diseases they may be considered as the expression of an elimination of toxic products through the skin. For we must remember that the skin is not only a respiratory organ but also besides the kidneys are our most important eliminatory organ for toxic products. When a dog is varnished all over its body it invariably dies from auto-intoxication. If persons burned on large surfaces of their body die in the same way, it may be due to a certain degree to the ointments, sticking plasters, and bandages through which no air can penetrate. When these persons are kept in water or even dry but without any bandage or clothing on, as I have seen in the wards of Dr. Sneve in Minneapolis, they may remain alive. Tonsillitis is frequent in infectious diseases and also in Graves's disease.

All the above symptoms of fever may be considered as expression of the efforts of nature to defend herself by eliminating toxic products. All toxic products which are the causes of infection act upon the thyroid gland, which by its increased activity produces symptoms such as we see in Graves's disease. That these symptoms, especially abundant perspiration polyuria, and diarrhœa, typical in some infectious diseases, may be considered as the direct consequence of thyroid activity can be best shown by the fact that the

thyroid gland governs the functions of the skin, intestines, and kidneys. When the thyroid is extirpated or degenerated as in myxœdema all these symptoms are diminished and they are much augmented in the opposite condition in Graves's disease. In a communication to the Paris Biological Society on Feb. 25th, 1907, I showed that the thyroid and kidneys stand in very close relationship and that gout may be produced by thyroid degeneration and subsequent alteration of the kidneys by which uric acid is retained. By thyroid treatment we can powerfully augment the elimination of uric acid, and by such a medication the quantity of urine is augmented and it contains a higher proportion of solids with a higher specific gravity. In myxœdema there are very often oliguria and retention of the solids. In Graves's disease and fever there is an augmented elimination of uric acid and also often in diabetes (hyperthyroidia).

That the symptoms of fever may be considered as due to increased thyroid activity is also shown by the fact that nearly all such symptoms may be produced by thyroid preparations. I have personally taken for experimental purposes during ten months thyroid tablets and experienced the sensation of heat, flushings, and abundant perspiration. It is interesting to note that all kinds of wounds and contusions I got during the time I took these tablets healed with surprising rapidity with fine granulations far better than previously; on the other hand, I very frequently suffered from tonsillitis and acne eruptions.

Symptoms similar to fever have also been produced in animals by thyroid feeding—thus very often elevation of the frequency of the pulse from 100 to 140–160 beats (Lanz), and from 150 to 200 beats (Georgiewsky), whilst Ballet and Enriquez (30) produced regular fever in their animals; Easterbrook (31) also produced "some pyrexia" in his animals and an increase of pulse-rate of about 40 a minute. As Dr. Tanberg, former assistant of the Physiological Institute in Christiania, told me, he has produced an increase of the temperature of two and a half degrees in animals the thyroid of which he has extirpated, after giving very large quantities of thyroid gland.

It is of great interest to the question at issue that the remedies which we employ to fight fever should also produce symptoms like the thyroid does when it is in increased activity. Thus salicylates produce a vaso-dilatation and abundant perspiration and afterwards diminution of the temperature. I have myself taken salicylates or acetonitril preparation and felt the sensation of heat and afterwards perspiration. When we take a hot air or steam bath for cold or gouty pains we produce first great heat, tachycardia, and then abundant perspiration, and the typical symptoms of fever, or increased thyroid activity.

We know that certain drugs, as found by Garnier (18), have an exciting action upon the thyroid, such as iodine, and what is especially important, pilocarpine. The great sudorific action of this drug may stand in some relation to its effect upon the thyroid. It lies very near to suppose that the different drugs which antagonise fever do so by acting first upon the thyroid gland and exciting its increased activity to fight infection. But if we gave too much of these we might exhaust its activity in the same way as Garnier (18) found an exhaustion of the colloid of the thyroid after too much iodine. This shows that we should not give antipyretics in too large doses. We should excite thyroid activity but not overdo it.

That the thyroid is able to protect us against infectious diseases can be best shown by the fact that it exercises a certain influence upon phagocytosis. When the thyroid is extirpated or degenerated the red blood corpuscles are diminished; and after thyroid treatment they are much augmented. After the extirpation of the thyroid there is first hyperleucocytosis which, according to certain authors, is followed by hypoleucocytosis. Quite recently Mdlle. Fassin (30) has shown in experiments made in the laboratory of the Royal University of Liège that after extirpation of the thyroid there is a checking of the production of alexins. In a discussion on internal secretions a few years ago in one of the London medical societies Sir A. E. Wright insisted upon the importance of internal secretions upon the production of opsonins. Fever can be produced with similar symptoms by toxic products of different origin, as from small elements of the vegetable kingdom like bacteria, certain plants, and even fruits, as is shown by the urticaria which follows in some persons after eating strawberries. Certain minute elements of the animal kingdom have a similar power, such as protozoa like trypanosomes, and we may also instance certain kinds of animal food like oysters in regard to some persons, the poison of snakes, and certain insects like tarantels and scorpions. Besides these poisons coming from without, fever with similar symptoms can also be produced by poisons formed within our body by the hyperactivity of a gland—the thyroid. When so many different poisons produce the same result it lies near to suppose that they do this by means of the same agency, which, according to the aforesaid observations, is very probably a thyroid hyperactivity.

As is well known, a condition of hyperactivity of the thyroid may be followed by its exhaustion and thus Graves's disease may often be followed by myxœdema athyroidia. In the same way the hyperactivity of the thyroid gland in infectious diseases may also be followed by its exhaustion and a myxœdematous condition. Even complete myxœdema most frequently appears after a previous infectious disease—a fact recognised by the earliest English authors on this disease. Accordingly, it is not surprising if an infectious disease like trypanosomiasis is followed by a condition like sleeping sickness, which, as I have shown at the German Congress for Internal Medicine in 1905, presents all the clinical symptoms of, and identical anatomico-pathological alterations of the central nervous system with, myxœdema. On the other hand, trypanosomiasis presents all the typical symptoms of Graves's disease. In syphilis also after the fever with eruptions in the secondary stage, in which we not infrequently see, especially in women, a swelling of the thyroid, we find in the tertiary stage many symptoms of a condition of myxœdema or hypothyroidia and with the iodine treatment we are introducing the main element of the thyroid gland. Iodine is also especially active, if not given in too large doses, in exciting thyroid activity, and sometimes it even provokes Graves's disease. With the atoxyl treatment we are giving another main element of the thyroid—i.e., arsenic.

Persons of healthy constitution with a good working thyroid may get the sensation of heat and perspiration spontaneously after a cold or gouty pains, even without salicylates, and feel better afterwards, whereas persons with a deficient thyroid have difficulty in producing the symptoms of fever. Just lately I have observed a young man, aged 22 years, with symptoms of hypothyroidia as described by Hertoghe (29), who had follicular tonsillitis. He presented none of the symptoms of fever, but it took him ten days to get over it and he felt very weak afterwards. There was this summer an epidemic of typhoid fever in the lunatic asylum of Colorno, near Padua. I have it from Dr. Gassenghi, of the University of Padua, that half of the patients died, but it is very interesting to note that there was no fever. This may stand in relation with the fact that many cases of insanity and idiocy stand in etiological relation to alterations of the thyroid gland. I feel sorry not to be able to enter more fully upon this interesting subject, but I may shortly mention that, as I have stated in the Neurological Society of New York (April 2nd, 1906), I have observed several cases of dementia præcox and melancholia with alterations of the thyroid and sexual glands in each case. Alcoholics suffering from pneumonia seldom get high fever, but often die in a short time. Alcohol in large quantities not only causes degenerative changes in the heart but also in the thyroid. And we should not forget that there exist very close relations between the activity of these two organs.

It seems to follow from these observations that persons with a good sound thyroid have a better chance in fighting infections and intoxications than persons with a degenerated thyroid. In persons with an active thyroid, an increased activity of the gland, and thus a better functioning of the eliminative organs which are governed by it, can take place more easily than in persons with a degenerated thyroid and in consequence with a dry skin, constipated bowels, and lazy kidneys. Some hints may be derived from these observations in the interest of prophylaxis and prognosis and also for the purposes of life insurance.

It seems to me that the conclusion is not unjustified, that fever is a beneficent institution of our organism which is produced by an increased activity of the thyroid gland as a reaction against toxic products and poisons in general. The symptoms of fever are the expression of this increased activity and they are directed towards the elimination of noxious elements. It would be unreasonable to oppose this spontaneous healing tendency of nature by fighting these salutary symptoms, unless there be hyperpyrexia. Fever, as

probably disease in general, serves the ends of nature in the interest of our conservation.

*Bibliography.*—1. Charrin: Les Defenses Naturelles de l'Organisme, Paris, 1898 (Masson). 2. Greenfield: quoted after Ewald, Die Erkrankungen der Schilddrüse. Nothnagel's Handbuch, Wien. 1896, p. 159. 3. Pel: Myxœdema, Volkmann's Sammlung Klinischer, Vorträge, 1895, No. 123. 4. Murray: Diseases of the Thyroid Gland, Part I., London, 1901. 5. De Quervain: Semaine Médicale, 1905. 6. Breisacher: Untersuchung über die Gland Thyroidea, Archiv für Anatomie und Physiologie, Supplement Band, 1889. p. 509. 7. Blum: Pflüger's Archiv, 1902, vol. xc., p. 285; Archiv für die Gesammte Physiologie, 1902, p. 617. 8. Chalmers Watson: THE LANCET, Feb. 11th, 1905, p. 347. 9. Bang: Ueber die Ausscheidung des Iodothyrins durch die Milch, Berliner Klinische Wochenschrift, Dec. 27th, 1897. 10. Mosse: Académie de Médecine, 1898. 11. Jeandelise: L'Insuffisance Thyroidienne et Parathyroidienne, Paris, 1904. 12. Forsyth: THE LANCET, Jan. 19th, 1907. p. 154. 13. Lindemann: Virchow's Archiv, 1897, p. 202. 14. Lanz: Zur Schilddrüsenfrage, 1894, Leipzig. 15. W. Edmunds: THE LANCET, May 11th (p. 1317), 18th (p. 1381), 25th (p. 1449), 1901. 16. Lorand: Comptes Rendus de la Société de Biologie, 1906. 17. Hunt: International Congress of Physiology, Heidelberg, 1907. 18. Garnier: La Thyroide dans les Maladies Infectieuses, Thèse de Paris, 1899. 19. Roger et Garnier: Presse Médicale, April 19th, 1899. 20. Crespin: Giornale dell' Associazione Napolitano di Medici, xii., 3. 21. Torre: La Tiroide nei Morbi Infettivi, Il Policlinico, No. 6, p. 145; No. 8, p. 226; No. 10, p. 280. 22. Bayon: Würzburger Abhandlungen, 1904. 23. A. Kocher: Mittheilungen aus den Grenzgebieten, &c., 1901. 24. Lanz: quoted after Buschau, Wien, 1895. 25. Georgiewski: Zeitschrift für Klinische Medicin, 1897, Band xxxiii., f. 1—2, p. 153. 26. Lorand: Transactions of the Pathological Society of London, vol. lvii., part 1, 1906. 27. Lorand: Congrès Français de Médecine, 1904, Paris. 28. Moebius: Die Basedow'sche Krankheit, Nothnagel's Handbuch, II. edition. 29. Hertoghe: Die Rolle der Schilddrüse, &c., München, 1900, and Paludisme et Myxœdèm, Progrès Médical Belge, No. 2, 1902. 30. Ballet and Enriquez: quoted after Buschau. 31. Easterbrook: THE LANCET, August 27th, 1898, p. 546. 32. Fassin: quoted after Zentralblatt für die Physiologie und Pathologie des Stoffwechsels, 1907.

Christiania, Norway.

## FOUR CASES OF TUBERCULOUS DISEASE OF THE TEMPORAL BONE.

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IT is just three years since the first of a series of four cases of undoubted tuberculous disease of the petrous came under my care. They form a fairly homogeneous group, all occurring in children, and none showing any evidence of pulmonary infection. The comparatively recent death of two of the four cases has been an interesting disappointment and has, I think, in a sense rather added to the significance of these cases. I shall give the four cases briefly and shall then comment on some points about them.

CASE 1.—The patient, a female child, aged 11 years, was admitted into St. Bartholomew's Hospital on Sept. 2nd, 1904, for headache and vomiting. The history of the case showed that the left mastoid was operated on at a children's hospital seven years previously without cessation of discharge which had continued ever since. Some months ago an abscess formed and burst through the scar. The child had been ill for the last two days with frequent vomiting, severe frontal headache, and general pains in the head. On admission the temperature was 100·8° F. and the pulse was 140. The tongue was dirty and the child looked ill. There was a sinus over the left mastoid, the surrounding skin being undermined and bluish. An operation was performed on the same day. The old scar was reopened. The surface of the posterior part of the mastoid region was bare and eroded. An old cavity in the mastoid was filled by a caseous mass. There was a fistula of the external semicircular canal. A probe introduced into the posterior limb passed out into the dura mater on the posterior surface of the petrous. The external canal was followed up by a burr. A tuberculous abscess was found connected with it and bounded posteriorly by the dura mater. The superior canal was found to be enlarged on its convexity into a caseous abscess. The vestibule was opened up above the facial nerve and cleared out. The walls of the mastoid cavity were softened and a large removal of bone was made, exposing a part of the descending portion of the facial nerve. The tympanum was cleared out and the vestibule and cochlea were opened and the whole promontory burred away, leaving the nerve spanning the cavity in a narrow bridge of bone. A large concho-meatal flap was cut and turned upwards. The cavity was packed with gauze from in front and well drained behind.

*Result.*—There was no facial paresis. The whole cavity became completely healed until December, 1904, when a small amount of discharge brought the patient back to the hospital. It came from a small cavity in the floor of the bony meatus. This was thoroughly scraped and healed in about a fortnight. The patient was seen on Oct. 1st, 1907, when the ear was perfectly sound.

CASE 2.—The patient, a male child, aged two years, of healthy appearance, was admitted into the hospital on August 26th, 1905, with chronic discharge from the right ear and a sinus over the right mastoid and glandular cold abscess below the angle of the right jaw. At the operation there was found underlying the sinus a spongy sequestrum consisting of the roof and posterior wall of the meatus and the whole of the mastoid. This was loose and was removed. The cavity left was walled in by flabby, pale granulation tissue which lay above and behind upon the exposed dura mater. There was only a small amount of softening of the bony parts of the cavity wall. A radical operation was done and the abscess in the neck was opened, scraped, and stitched up.

*Result.*—The whole cavity did remarkably well and rapidly became completely dry. The incision in the neck healed by first intention and there was no recurrence of the abscess.

This boy was readmitted to the hospital in September, 1907, with symptoms af tuberculous meningitis. The mastoid operation had been a complete surgical success and was quite dry. He died in about three weeks and the necropsy showed a typical tuberculous meningitis. Post mortem, careful examination of the petrous showed that there was no trace of disease present in it.

CASE 3.—The patient, a male child, aged four years, was admitted into the hospital on Oct. 24th, 1905, with left mastoid abscess. There was an indefinite history as regards the duration of the left otorrhœa. A swelling behind the ear had been noticed for one week. On admission the temperature was 97° F. There was a lax, fluctuating swelling on and above the left mastoid, without redness or œdema. The meatus was blocked by granulation tissue. At the operation there was found to be a communication between the superficial abscess and the interior of the mastoid. The mastoid was filled by granulation tissue and the cavity was bounded by dura mater above and behind. The layer of granulation tissue on the dura mater extended some way beyond the exposed area of the membrane. A very extensive operation was carried out on the petrous and completed in the usual way. The nerve was found to be exposed in the tympanic part.

*Result.*—The whole cavity was soundly healed by the beginning of December, 1905. Histologically the granulation tissue showed typical tuberculous systems. The patient was seen on Oct. 16th, 1907, when the ear was perfectly dry and sound. There was no enlargement of the glands in the neck.

CASE 4.—The patient, a male child, one year old, was admitted to the hospital on April 18th, 1906. There was a history of discharge from the left ear since shortly after birth. On April 10th a sequestrum, formed apparently by a part of the base of the petrous, had been removed through the left meatus. The lymphatic glands over the mastoid and those in the posterior triangle of the neck were enlarged and there was a cold abscess in the neck. A radical operation was done on April 20th. The base of the petrous was extensively softened and infiltrated by granulation tissue. The tympanum was filled by caseating tubercle which extended forward along the Eustachian tube to the apex of the petrous and was markedly more degenerate anteriorly. There was a button of granulations about the fenestra ovalis which was continuous with a mass filling the vestibule. The window was enlarged and the vestibule was cleared out. The cochlea was not obviously involved. The abscess in the neck was opened, scraped, and sutured.

*Result.*—The ear did well and the cavity was completely healed in about six weeks. The wound in the neck healed by first intention but subsequently reopened and a further operation on the tuberculous glands became necessary. For some time the child used to fall over on his left side when sat up in bed, but this disappeared in a few weeks. A guinea-pig inoculated with the tympanic granulations developed typical tuberculosis.

In January, 1907, the patient was brought back to the hospital with a very large mass of glands in the left side of the neck. The ear was quite dry and sound. A very extensive operation was performed on the side of the neck in one of the general wards, but the wound became tuberculous and the child succumbed to a rapid spread of the disease.

These cases obviously do not belong to the type of phthisical otitis media that occurs in adults; they correspond rather to the ordinary cases of bone tuberculosis in childhood. The youth of the patients is remarkable, three of them being aged one, two, and four years respectively, while the eldest was 11 years old. Furthermore, this patient's history goes back to the time when she was four years old, and at that time her aural condition necessitated an operation and was probably already of some standing. In none of the patients was there any evidence of tubercle in the lungs at the time of operation, nor was there post mortem in either of the cases that have died under observation. The disease seemed in all to be a local tuberculosis with a secondary glandular infection in Cases 2 and 4. The general health was affected in Case 1 rather by some acute extension of her labyrinthitis than by the chronic disease; in Cases 2 and 3 the general condition was not very bad at the time of operation; Case 4 looked very ill, with the look that children get who are suffering from chronic tubercle with a secondary infection. At the time of the operation I gave a very dismal prognosis for this child.

The path of infection in these cases is, I think, doubtful. Case 4 gave one the impression that tubercle had ascended through the Eustachian tube, the tympanum, and especially its forward part, being more affected than the mastoid. The other three cases I am inclined to consider as blood infections of the cancellous tissue of the petrous, possibly or probably on top of a previous suppurative otitis media. But in none was the condition seen in a sufficiently early stage to be judged conclusively. The cases will correspond then generally to such conditions as hip and knee tuberculosis, differing from them in the first place by the smaller bulk of bone involved and in the second by the inevitable presence of secondary septic infections. Considering the comparative rarity of sequestration of bone in suppurative ear lesions it is interesting that sequestra were removed in two of the four cases. In one of these the sequestrum had exactly the rarefied and spongy character of those so frequently found in hip-joint cases.

The immediate surgical results were strikingly good in all four cases and compare very favourably with those usually obtained with tuberculous joints. They could, however, be readily paralleled by resections of the knee-joint, and the common factor in these two classes of case will be found in the possibility of complete removal of diseased tissue. In each of these four cases a most painstaking effort was made to eradicate all tuberculous tissue and nothing was allowed to stand in the way of this object. Case 1 is only an example of the fact which I have proved repeatedly, that the whole of the labyrinth can be extirpated without the production of facial paralysis and without excessive risk to the nerve. Of my own cases four out of five have escaped completely; one had a paralysis which has been so far recovered from that it is difficult to tell which is the affected side.

The death of Case 4, while disappointing, must be viewed as the direct result of an incomplete removal of tuberculous glands. The bone operation was a complete success to the end. The death of Case 2 from tuberculous meningitis is more difficult to account for. The ear had been well during the whole of the intervening two years and was certainly not the cause of any recent infection of the meninges. There was no evidence of tubercle in any other organ. One is tempted to put it down as an ordinary tuberculous meningitis, a fresh and primary infection independent of the past. If tubercle had been sleeping in some organ during those two years it escaped detection at the post-mortem examination. Both deaths must in any case be taken into account for purposes of ultimate prognosis.

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# Medical Societies.

## SOCIETY OF ANÆSTHETISTS.

*Intrapericardial Rupture of an Aneurysm during Anæsthesia.—Status Lymphaticus and Death during Anæsthesia.—Modified Arm Rest.*

A MEETING of this society was held on Nov. 1st, Dr. R. J. PROBYN-WILLIAMS, the President, being in the chair.

The PRESIDENT referred sympathetically to the loss which the society had sustained in the death of its first President, Mr. F. Woodhouse Braine.—Dr. DUDLEY W. BUXTON and Dr. J. F. W. SILK added their tribute to Mr. Braine's many good qualities and to the work which he had done towards founding and carrying on the society.

Dr. A. M. H. GRAY (introduced by Dr. BUXTON) read the notes of a case of Intrapericardial Rupture of an Aneurysm, Death occurring during the Administration of an Anæsthetic. The patient, a man, aged 44 years, was admitted for sudden acute epigastric pain and an exploratory laparotomy was performed eight hours after the onset of symptoms. Progressive cyanosis was noticed and chloroform and oxygen were administered. The cyanosis became more marked, Cheyne Stokes breathing set in, and the patient died as the abdomen was being sewn up, nothing abnormal having been found. On post-mortem examination an aneurysm of about the size of a walnut was found in the ascending aorta communicating by a small opening with the pericardium which contained about half a pint of recent blood-clot. Dr. Gray said it was difficult to say whether death had been accelerated by the chloroform, but some who saw the case did not think there was sufficient blood in the pericardium to have caused death by pressure.—Dr. B. H. SPILSBURY said that in cases of death from rupture of the heart very little blood was found in the pericardium.—Dr. BUXTON said that the increasing cyanosis unrelieved by oxygen pointed to some intrathoracic condition. Chloroform by quieting the circulation should have been advantageous to the patient but by its slight interference with respiration was probably a contributing cause of death.—Dr. SILK inquired whether a local anæsthetic would have been better.—Dr. GRAY, in his reply, thought local anæsthesia might have been preferable.

Mr. HARVEY HILLIARD read a paper on a case of Status Lymphaticus in which Death occurred during the Administration of an Anæsthetic. Status lymphaticus being, he said, a condition of great rarity, and one in which the administration of anæsthetics, or the performance of even trivial operations without them, was attended with grave risk to life, the notice of the society might well be called to a case which ended fatally during the administration of an anæsthetic. Dr. Spilsbury, who made the post-mortem examination, was present to discuss the question from the pathological standpoint and illustrated his remarks by the exhibition of specimens. The patient was a young man, aged 21 years, 6 feet 3 inches in height, obviously overgrown and very thin, and of a highly neurotic temperament. He suffered from a condition necessitating circumcision and the fact of this had been on his mind for some time. He had suffered from diphtheria two years previously, and had just returned from a prolonged stay in Egypt. He was a great smoker of cigarettes and it transpired afterwards through his dentist that he was subject to faintness. The operation was fixed for 12 o'clock and the patient had taken an ordinary breakfast at 8 A.M.; he had remained in bed but had been smoking and inhaling the smoke from cigarettes all the morning. On examination before the administration of the anæsthetic Mr. Hilliard found a small rapid pulse, poor chest expansion, and considerable enlargement of the thyroid gland. There was very marked diffuse epigastric pulsation of the heart, but no adventitious sounds could be detected. Mr. Hilliard went on to say: "The patient's condition made me decide not to give him nitrous oxide and ether, and I selected C.E.$_2$ mixture as being in my view the best anæsthetic in the circumstances, and I administered this in my own regulating inhaler. When I began the administration the patient became very agitated, asked for brandy, said he felt faint, and that he 'could not stand it.' I calmed and reassured him, and he then passed quietly and without a struggle under the influence of the anæsthetic. I noticed, however, that the heart was beating very violently against the chest wall. While the patient was still lightly under the anæsthetic the operation was begun. When the prepuce was stretched with forceps he developed slight crowing inspiration and there was a tendency to draw up the legs. I therefore increased the percentage of the anæsthetic in the inspired air. At this moment the prepuce was severed and simultaneously the patient turned an ashen colour, stopped breathing, and his pupils dilated. I immediately stopped the administration, asked the operator to compress the lower ribs and restore the respiration, and I gave nitrite of amyl vapour meanwhile. This treatment quickly restored the patient and I asked the surgeon to hurry through with the operation, saying that I did not wish to give any more of the anæsthetic and I accordingly laid aside the inhaler. The parts were rapidly swabbed and a stitch was passed

when again the same symptoms of heart failure returned. All the usual restorative methods were resorted to, but unfortunately they all proved unavailing and the patient was obviously dead. Artificial respiration was kept up for 45 minutes, with skin frictions, mustard over the heart, acupuncture, hot-water bottles, amyl nitrite, and ammonia to the nostrils. I may add that when the patient 'fainted' on the second occasion I adopted the advice of Dr. Leonard Hill and for a moment sat the patient up and exerted pressure upwards in the epigastrium with a view to relieving any engorgement of the right heart that might be present by encouraging the patient to bleed into his splanchnic area. Manual compression of the heart was not tried. In reviewing this case I am unable to find any detail of the administration I should alter if I could have the opportunity of giving the patient an anæsthetic again. Unhappily this is not possible, and I can only hope to learn from the collective experience of the society how in future I might improve on the methods I adopted. To err is human, and it is only by being told of our mistakes that we can hope to mend them, for we all do what we believe to be best at the time. I trust, therefore, the discussion will bring out suggestions for treatment of these dangerous and unsuspected cases. One or two points impress themselves upon me. First, with regard to the previous preparation of the patient, I think it is very important not to rush this type of patient into an operation; I believe it would be better to send him into a nursing home for two or three days beforehand, so that he might be properly prepared, might benefit by the moral stimulus of the environment, settle down to the necessary discipline, and lose some of his nervousness. I believe it to be dangerous to allow patients to smoke before taking anæsthetics; there is no doubt that tobacco depresses the heart and would inhibit its capacity to recover from shock. I think the hypodermic injection of morphine and atropine before the administration of the anæsthetic would be of great value, and I regret now that I did not adopt it in this case. I believe the patient would probably have died even if the operation had been performed under a local anæsthetic, whether hypodermically or intra-spinally applied. Hypnotism as an adjunct might be of value in these very nervous cases. I have seen operations performed under its influence alone with satisfactory results, and know of others, an amputation of the thigh, for instance. I am not here to-night, however, to make suggestions to you but to learn from you, and I shall welcome any criticism you may have to offer and be grateful for any hints that may guide me in the future."—Dr. SPILSBURY read the notes of the post-mortem examination, which showed enlargement of the thymus, of the spleen, and of all the lymphoid tissue of the alimentary tract. The heart was small and showed commencing fatty degeneration. He said patients suffering from this condition were liable to die from comparatively slight causes. There was some congenital lack of vitality, a lower resistance to certain toxæmias due to deficiency of protective substances and a compensating increase of lymph tissue in channels where infection was likely to occur. Discussion was postponed to the next meeting when Dr. W. J. McCardie will read a paper on Status Lymphaticus.

Mr. L. KIRKBY THOMAS showed a modification of Carter Braine's arm rest giving greater adaptability.

## ROYAL ACADEMY OF MEDICINE IN IRELAND.

### SECTION OF PATHOLOGY.

*The Nitrogenous Metabolism in a Case of Myelogenous Leukæmia.*

A MEETING of this section was held on Oct. 25th, when Dr. A. R PARSONS, the President, who was in the chair, read a paper on the above subject.

Dr. WALTER G. SMITH said it was not usual to discuss the presidential address but he thought it would be unbecoming to pass over without remark a paper which marked a departure in the transactions of the section. It was a courageous attempt to investigate one of the darkest corners of pathology, the full investigation of which would tax the resources of the most skilled chemist. It was no disparagement of the paper to say that it did not lead to any definite conclusion. The same might be said of the general literature of the subject and it might be safely asserted that up to the present chemical investigation failed to throw any light on the cause of leukæmia. The subject, moreover, was only part of the much larger subject of the general effect of diseases of the blood on metabolism, the metabolism generally taking the direction of catabolic destruction. Before they could get any general light on the subject they must take into consideration other affections, such as gout with its uncertain relations to uric acid. More important than even the serious loss of proteins which had been observed in very acute cases of leukæmia, but not definitely in the chronic cases, was the question whether there was any distinction to be drawn, chemically or otherwise, between lymphatic and myelogenous leukæmia. There was, at any rate, one curious difference in regard to the nature of the cells that were found predominating in the two forms. Generally speaking, comparing the lymphocytes with the large neutrophile cells, they were distinguished by a lesser chemical activity, and it would almost seem as if the chemical activity of the lymphocytes in the normal body were held in check by anti-enzymes in the blood. They had become familiar with the doctrine that probably every cell in the body was, as it were, capable of eating itself. The chemical changes of the blood were so diverse that it was almost impossible to throw any light on the subject. All sorts of extraordinary things had been reported as existing in the blood. The xanthin bodies were well represented in the blood of leukæmia but there were other bodies which might be post-mortem products. The solid exudate in acute pneumonia underwent resolution with puzzling rapidity; that was probably due to autolytic action and they might probably look in that direction for the explanation of unresolved pneumonia. Dr. Parsons had been unable to trace any connexion between uric acid and the leucocytes in leukæmia and the fact that nitrogenous bodies in contact with the blood might furnish non-nitrogenous products showed how cautious they should be in interpreting the results of nitrogenous metabolism.

Dr. J. MAGEE FINNY said the subject opened up a great range for discussion. The practical point as to the x rays being one of the great causes of improvement, if not the sole cause, was very important. It was not so long since the rays were only applied for diagnosis; cases in which they had been used as a means of therapeusis were not very numerous, and it seemed very remarkable that such results had been obtained in the case. A relationship between the elimination of uric acid and the white cells had not been found; that, however, was valuable negative information for future observations.

The PRESIDENT replied.

## HUNTERIAN SOCIETY.

A meeting of this society was held on Oct. 23rd, Mr. H. L. Barnard being in the chair.—Mr. W. J. M. Ettles showed slides and specimens from two cases of Sarcoma of the Choroid. The first was a melanotic oval-celled neoplasm springing from the layer of large vessels; it extended as a pyramidal mass into the vitreous chamber. The retina was detached completely in the usual funnel-shaped manner. The ocular tension was normal. The operation was performed seven years ago, and the patient, a man, aged 58 years, remained in good health. The second case, also a melanotic sarcoma, was more advanced. The anterior chamber had disappeared, the lens was applied to the cornea, and the iris, by long-continued pressure, was imbedded in the cornea so that the posterior margin of the iris was continuous with the posterior surface of the free cornea. Perforation of the sclerotic had taken place at the equator at the point of emergence of one of the vorticose veins. The contents of the orbit were removed with the eyeball, but unfortunately local recurrence was rapid.—Dr. W. Langdon Brown showed a Ruptured Aneurysm of the Pulmonary Artery. The ductus arteriosus was patent and the right ventricle was much hypertrophied. He suggested that owing to the patency of the ductus arteriosus the pressure on the right side of the heart was increased, and this led to arterio-sclerosis which in due course was followed by aneurysm.—Dr. Theodore Fisher asked whether pressure was more than a predisposing cause in atheroma. Some parts of the aorta were more liable to atheroma than others and one was the spot where the ductus arteriosus joined the aorta.—Dr. W. A. Milligan showed, amongst other specimens, a specimen showing a Calculus in both Ureters removed from a child, aged four and a half years. There was double pyonephrosis.—

Mr. Hugh Lett showed two Ureteric Calculi which lay in the upper half of the ureter. In both cases they were successfully removed by operation.—Mr. H. M. Rigby exhibited a skiagram which showed Two Shadows in the course of the Ureter; the upper was a calculus and the lower probably a phlebolith. He advocated the parasacral incision for removal of calculi from the lower two inches of the ureter. He had operated successfully on five cases by this method.—Dr. A. C. Jordan brought forward skiagrams of a Calculus in the Lower Part of the Ureter, to show how much more clearly the calculus may be demonstrated with a small diaphragm than with a large one.—Mr. Barnard showed: (1) A Part of the Small Intestine excised for gangrene due to strangulation by an omental band adherent to the appendix; (2) specimen from a successful case of Resection of the Intestine from the Ileum to the Middle of the Transverse Colon for Carcinoma; (3) specimen from a successful case of Resection of Part of the Sigmoid Flexure for carcinoma of the fungating papillomatous variety; (4) specimen from a successful case of Resection of Part of the Ileum for Sarcoma; and (5) specimen from a successful case of Resection of Part of the Transverse Colon for a myxofibromatous papilloma which had produced a chronic intussusception.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Nov. 1st, Dr. W. Langdon Brown, the President, being in the chair.—The President and Dr. Leslie Durno showed a Heart with Ruptured Aneurysm of the Pulmonary Artery and a Large Patent Ductus Arteriosus. A groom, aged 33 years, the father of four healthy children, had generally enjoyed good health. Latterly he had breathlessness on exertion, a stuffy feeling at the chest, and on severe exertion he would get dusky in colour. About a fortnight before he died he was attacked with severe pain in the chest and sickness, attributed to gastritis. He resumed work for one day but on the night following he suddenly died. Post mortem the pericardial sac contained about a pint of dark venous clotted blood; there was a ruptured aneurysm of the pulmonary artery, the right side of the heart was greatly hypertrophied, and there was a large patent ductus arteriosus. The sequence of events probably was that owing to the patent ductus arteriosus the pressure in the right side of the heart had to rise to that of the left and to do so the heart had greatly to hypertrophy. The ductus arteriosus and the pulmonary artery were found to be atheromatous owing to continued high pressure. The pulmonary artery gradually gave way and a dissecting aneurysm formed, and it was probably pressure of that which caused the vomiting. The aneurysm finally ruptured and the sudden rise of pericardial pressure caused the heart to stop. The specimen is unique and shows that continuation of the circulation required that the pressure in the right heart had to be raised to that of the left, that high pressure is a cause of atheroma, and that vestigial remnants are liable to degenerate.—Mr. W. Campbell M'Donnell read notes of a case of Nephritis in a man, aged 54 years, who had dyspnœa, general anasarca, ascites, and much albuminuria. In bed he gradually improved and then under methylene blue, one grain three times a day, the albumin rapidly lessened to a trace and his general symptoms disappeared.—Dr. B. G. Morison read notes of a case of a successful Protracted Breech Labour in a Primipara, aged 34 years. The case was tedious, the uterine pains never being very severe, and the two days allowed for natural efforts were beneficial by preparing and dilating the passages and so facilitating the after-stages of delivery.—Dr. D. Ross showed a lad, aged 17 years, suffering from Chronic Bright's Disease who had had two severe attacks of uræmia. The urine averaged 70 ounces per diem, had specific gravity of 1008, and contained much albumin. The blood pressure as registered by the Riva-Rocci sphygmomanometer was 190 mm. Hg. Dr. Ross also showed a specimen of a Kidney almost entirely replaced by Calculus removed from a woman, aged 42 years, who had died from a slight attack of septicæmia after being delirious for four days. The healthy kidney was enlarged, weighing nine ounces, and alone was probably unable to excrete the poison, hence delirium and death.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A pathological meeting of this society was held on Nov. 1st, Dr. W. H. Cheetham being in the chair.—Dr. A. S. F. Grünbaum read a paper on Some Experiments with a Pathogenic Yeast. By feeding mice on a yeast isolated from a case of mammary cancer pulmonary, bronchial, and intestinal infection was produced. He was unaware of any previous record of alimentary blastomycotic infection. Marked proliferation of pulmonary cells was found in the lung. The bronchial gland tissue had largely melted away without obvious necrosis or inflammatory reaction. The intestinal lymphatic glands were greatly enlarged, and, like the other organs already mentioned, were full of blastomycetes. Specimens showing hepatic fibrosis by peritoneal infection and the formation of an adenomatoid condition in the active mammary gland by intra-mammary injection were also shown and described.—Mr. J. Tregelles Fox read a paper on the Site and Rôle of the so called Sigmoid Flexure (Human) with reference to Recent Advances in Physiology, in which mention was made of a new theory of the human alimentary canal as consisting of five retort-like divisions connecting in series and exhibiting analogies and homologies of structure and function. The first and last had resemblances and likewise the second and fourth, but the central one, the all-important and most vital small intestine, was unique. The final one—proposed to be named "omegon" (restricting the term "colon" to the rest of the large intestine, and "enteron" to the small)—was special to man and comprised the sigmoid, or omega loop of Treves, or colon ilio-pelvienne of French writers, together with the so-called "rectum." After a historical sketch of anatomical and physiological opinion the view was advanced that the normal site and special function of this division required further study and were very important as holding the key of the bowels. Analogy with the other four retorts taught something. Its relations with many disorders required working out. Its efficient action—"Eulapaxia," which was described—would abolish constipation except when due to actual disease, and a better understanding thereof would give precision in its treatment where necessary.—Dr. E. F. Trevelyan made some remarks on a case of Sarcoma of the Thymus Gland from a case of Myasthenia Gravis. Microscopic sections prepared from some of the muscles were shown.—The following specimens were shown. Dr. T. Churton: (1) Hæmorrhage in the Left Hemisphere from a woman, aged 29 years, with tuberculous meningitis; (2) Atheroma of Basilar and Vertebral Arteries (diagnosable during life); and (3) Longitudinal Softening of the Posterior Cornu of the Spinal Cord.—Mr. J. F. Dobson and Dr. J. Kay Jamieson: a Hernia of the Small Intestine through a Cleft in the Sigmoid Mesocolon of a Fœtus.—Mr. W. Gough: Heart with Right Coronary Artery plugged by an Embolus (sudden death).—Dr. W. H. Maxwell Telling: Liver and Spleen from a case of Hanot's Cirrhosis.—Specimens were also shown by Dr. T. H. Hunt, Mr. H. Secker Walker, Dr. A. L. Whitehead, Dr. J. B. Hellier, Mr. B. G. A. Moynihan, and Mr. H. Littlewood.

MEDICO-LEGAL SOCIETY.—On Oct. 29th this society held the first meeting of the new session, Mr. Justice Walton, the President, occupying the chair. There was a large attendance of members and visitors.—In the course of an inaugural address the President pointed out the claim which the society should have upon the attention and interest of members of his own profession in particular. Just as medical members were wont, he hoped that lawyer members would contribute to the usefulness and interest of the meetings by favouring the society with cases within their experience which had been tried in the courts and in which interesting medical and surgical questions had had to be considered. He did not for a moment suggest that the society should sit as a kind of medico-legal court of appeal upon the decisions in the courts or the findings of juries.—Dr. W. H. Willcox followed with a very interesting paper on the Medico-Legal Importance of Wounds Produced by Firearms, illustrating his remarks with specimens, photographs, and diagrams.—In the discussion that followed Professor H. Harvey Littlejohn (Edinburgh), who also showed photographs, Sir William Collins, Dr. J. Scott, Dr. Wise, Mr. Troutbeck, and Dr. L. Freyberger took part.—Professor John Glaister (Glasgow) sent some photographs bearing on the subject.—The President, in proposing a vote of thanks to the reader of the paper, said that he was glad to hear Dr. Willcox's remark that it was the expert's duty to give the scientific facts and leave the conclusions to be drawn by the judge and jury. In his opinion the interests of justice were promoted by having expert witnesses on both sides.

# Reviews and Notices of Books.

*Manual of Operative Surgery.* By JOHN FAIRBAIRN BINNIE, A.M., C.M. Aberd., Professor of Surgery, Kansas State University; Fellow of the American Surgical Association, &c. Third edition, revised and enlarged. With 678 illustrations. London: H. K. Lewis. 1907. Pp. 743. Price 12*s.* 6*d.* net.

THE publication of a third edition of this work within three years of its first appearance is a sufficient guarantee of its popularity and we must congratulate Professor Binnie on the success which has crowned his labours. The present volume has been enlarged by 95 pages and 111 new illustrations, original or selected from various sources, have been added. The author has aimed at writing a book on operative surgery in which "all descriptions of those procedures which are ordinarily thoroughly given in the usual text-books on general surgery are omitted." Consequently descriptions of amputations, ligation of vessels, portions of genito-urinary and rectal surgery, and operations on bones and joints are not included. Seeing the number of books on operative surgery and the excellent descriptions of these operations which the majority of them contain, the procedure is undoubtedly a wise one, as it leaves the author more space to discuss recent work and at the same time prevents the manual becoming too large.

Part I. deals with the operations on the head and neck. The chapters on the surgery of the skull and brain contain accounts of most recent operations in this region. Cushing's decompressive operations over the cerebrum and cerebellum, Ballance's operation for hydrocephalus, operations for Jacksonian epilepsy, the radical mastoid operation, Killian's operation on the frontal sinus, and so on are all well illustrated and described from an essentially practical point of view. Plastic operations on the face, lips, and palate receive their full share of attention and the text is amplified by copious illustrations. Brophy's and Lane's methods of closing palatal defects are fully described. In the chapter on strumectomy full accounts of Kocher's and Mikulicz's operations are given.

Part II. opens with an excellent description of the Halsted and other operations for excision of the breast. This is followed by an account of the operations on the thorax in which pulmonary decortication, pneumotomy, and cardiolysis are described and discussed. As might be expected, the section on the abdomen is thoroughly up to date in every respect. The latest and most approved methods of performing gastro-jejunostomy, gastro-duodenostomy (Finney's operation), and gastrectomy are given very fully but at the same time the text is nowhere encumbered with useless verbiage. Several excellent chapters are devoted to the surgery of the pancreas, the suprarenal body, the spleen, and the gall-bladder and bile-ducts. In the 12 chapters devoted to the genito-urinary system the author describes most of the well-known operations and in addition includes some of the more recent ones, such as Edebohls's method of performing nephropexy, Harris's operation for obliterating the retro-peritoneal space in which the mobile kidney glides, renal decortication, and so on. Some of the operations which are given for exstrophy of the bladder are most ingenious, particularly one devised by Rutkowski who, after isolating a portion of the small intestine, subsequently utilises it to close the defect.

In pursuit of his original plan Professor Binnie has only devoted seven short chapters to the surgery of the extremities. In these he describes the treatment of Dupuytren's contracture, Duchenne-Erb paralysis, flat foot, hallux valgus, metatarsalgia, and talipes equino-varus, including two very useful chapters on tenorrhaphy and tendon transplantation. Chapters on the principles of plastic surgery and on the choice and preparation of sutures bring the volume to a close.

The book is well written, copiously illustrated, and printed on good paper. It should prove of great value to the student who is reading for the higher examinations and to the junior surgeon who wishes to refresh his memory on any important point connected with the major operations.

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*Heart Disease and Thoracic Aneurysm.* By F. J. POYNTON, M.D. Lond., F.R.C.P. Lond. Oxford Medical Manuals. London: Henry Frowde and Hodder and Stoughton. 1907. Pp. x.–304. Price 5*s.* net.

THE editor of this excellent series of manuals made a wise selection in asking Dr. Poynton to write the volume on Heart Disease. He is an author who has done distinguished work both on the clinical and pathological sides of the subject and he has the teaching faculty in no small degree. The book begins with a full and excellent description of the methods of clinical investigation in heart disease and goes on to treat of the various cardiac manifestations of rheumatism which are taken as a type of heart lesions; the author makes good use of his researches into the state of the cardiac muscle in rheumatism. In subsequent chapters the variations in type shown in heart disease from other causes are described. This method is an advantageous one, as it enables the student at the outset to obtain a clear and broad survey of the natural history of heart disease before he is burdened with a too detailed account of that many-sided problem. There follow descriptions of non-rheumatic valvular and pericardial disease, including an admirable summary of chronic valvular lesions. The last third of the book is devoted to myocardial and neuro-muscular diseases of the heart, arterial disease, and aneurysm, whilst in an appendix are some useful therapeutic suggestions.

The most noteworthy feature about the book is the large amount of information which it contains; in fact, a volume with the appearance of a small text-book strikes the reader as almost a treatise. It is perhaps a pity that Dr. Poynton did not have an opportunity to adopt a somewhat more discursive style, as some of his most condensed chapters, full as they are of excellent teaching, would have gained in attractiveness by an expansion of their subject matter. The points in the book to which special reference may be made are as follows. Dr. Poynton is a strong advocate of the school which brings simple and infective endocarditis into line as differing in degree and not in kind. It need hardly be said that he adduces the diplococcus described by himself and Dr. Paine in the columns of THE LANCET and elsewhere as a specific cause of simple rheumatic endocarditis; indeed, when the strength of the case which they made out for it is considered, it is surprising that these pages contain so modest a statement of its claims; it must be admitted that their arguments in favour of the unity of infection in simple and malignant endocarditis have much weight. The author lays stress on the essential chronicity of the lesion that contracts the mitral valve, a fact which is not always clearly taught. The chapters on pericarditis and upon myocardial affections are amongst the best in the book, although we consider that the term "pyopericardium" might with advantage be employed in place of "suppurative pericarditis" to denote the obscure and chronic form of the disease in children. On p. 171 the author mentions the dulness that occurs at the left back in pericarditis with effusion, but not the tubular breathing that is undoubtedly sometimes heard there in that condition. He lays stress on the possible rheumatic nature of multiple serositis. In discussing angina pectoris, "pseudo-angina," for sufficient reasons, is not differentiated as a clinical entity. On p. 165 the arterial type of aortic regurgitation is spoken of as accompanied by high blood pressure, to which some will

demur. Pathology and treatment receive due attention; we note that Dr. Poynton does not follow the fashion of discarding digitalis for strophanthus, definitely saying that in mitral regurgitation the latter drug is not so satisfactory as the former. In pericarditis he advocates an expectant treatment and he acknowledges himself opposed to the doctrine that salicylates have a specific curative action in rheumatism, even in heroic doses, although here, as always, he accords a fair statement to the opposite opinion. In his description of Stokes-Adams disease he does not mention the importance of thorough intestinal evacuation, which may be of undoubted value. He is always careful to lay stress on little points in the management of cases of which the student is too often oblivious or ignorant.

From all points of view this volume may be recommended to the student as a good text-book and it would be a useful acquisition to the practitioner's library. It is well illustrated and carefully printed but the index might with advantage be expanded considerably.

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*The Practice of Obstetrics. In Original Contributions by American Authors.* Edited by REUBEN PETERSON, A.B., M.D., Professor of Obstetrics and Gynecology in the University of Michigan. Illustrated with 523 engravings and 30 full-page plates. London: Henry Kimpton. 1907. Pp. 1087. Price 31*s.* 6*d.* net.

THIS bulky volume is written by ten different contributors under the editorship of Dr. Peterson, whose name does not appear in any other capacity than that of editor. The first section dealing with the physiology and development of the fœtus is very good and full justice is done to the important labours of Graf Spee, Minot, and Peters in this field of research. The remainder of the work is divided into eight sections which deal respectively with the physiology and pathology of pregnancy, labour, and the puerperium, obstetric operations, and the newly born infant. The signs of pregnancy and its differential diagnosis are well described and the latter section is illustrated with a number of good and useful reproductions of photographs. Indeed, all the illustrations throughout the book are exceedingly good and very numerous; besides 30 full-page plates there are 523 engravings. In the description of the mechanism of vertex presentations we notice that the greater preponderance of first vertex presentations is attributed to the position of the placenta, or Cameron's theory, as the author terms it. This is not in accord with the established facts as to the usual relation between the position of the placenta and that of the fœtus, nor is it a satisfactory explanation. The account of the mechanism of labour is very fair but it should have been clearly pointed out that restitution and external rotation are two separate movements and they should not be described under the one heading. The account of what may be felt during the third stage of labour on palpation of the abdominal wall is incomplete and not detailed enough to be of any use to the student, nor is the section on the management of the third stage of labour at all satisfactory. In the puerperium massage of the abdomen is recommended to be commenced a few hours after labour and to be continued more vigorously and deeply on the second day. We are quite in agreement with the view that much good is to be obtained by the use of abdominal massage in the puerperium but we do not think that it should be commenced before the end of the first week.

It is extraordinary how energetic many American writers are in their treatment of a retroverted incarcerated gravid uterus. In this book we are told that one useful method is to introduce a colpeurynter into the posterior vaginal fornix and to fill it with from 500 to 1000 grammes of quicksilver, the patient being placed in the Trendelenburg position. We wonder what the author would say to the teaching of many English obstetricians to do nothing at all beyond placing the patient in bed and passing a catheter for a few days—the most successful and best plan of treatment. It is a pity to find several pages devoted to an account of the condition described by many old observers as placentitis, in view of the fact that as their knowledge of the real anatomy and age changes in the placenta was extremely scanty their observations on so-called placentitis are completely valueless. If the chapter on the pathology of the placenta were limited to an account of what is really known and proved by recent researches it could be contained in a very small compass, yet we find 35 pages devoted to this chapter, so that it is little wonder the whole book amounts to some 1087 pages. In the same way there are several pages devoted to an account of so-called deciduitis, with an elaborate classification, a condition which is mainly hypothetical, and yet we find that the pathology of hydatidiform mole, of which we now have a great deal of accurate knowledge, is dismissed in a page. The section dealing with the pathology of the fœtus contains much valuable information, but here, again, to devote a special chapter to monstrosities in a book on obstetrics seems to us utterly out of place, when we find only half a page given to what from the clinical point of view is of the utmost importance—namely, tetanic contraction of the uterus. Pelvimetry is so well described and illustrated that we hoped the section on the clinical course and conduct of labour in the different forms of contracted pelves would be of value; unfortunately the subject is treated in a very unsatisfactory manner and the mechanism of labour in contracted pelves is not described because the writer of the section says that the details are not known. This is a most surprising statement and one which does a great injustice to the many eminent obstetricians who have devoted much time and labour to this subject, with the result that our knowledge of the mechanism of labour in contracted pelves is exceedingly full.

From what we have said it will be evident that the work is very unequal and from the clinical point of view some of it is unsatisfactory. It is a pity that the editor has not discharged his duties a little more strictly and that he has not kept the whole within more moderate limits.

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*A Text-book of Pathology.* By ALFRED STENGEL, M.D. Fifth edition. London and Philadelphia: W. B. Saunders Company. 1907. Pp. 979. Price 21*s.* net.

IT is more than two years since the fourth edition of this work appeared and each edition which has been called for since the original edition in 1898 has been subject to complete revision. The consequence is that the book has been throughout what the author intended it to be, a practical text-book of pathology considered from the point of view of the clinician, a good deal of technological matter, such as the discussion of methods of examination, being omitted, as the author has taken it for granted that his readers are either familiar with their subject or in a position to consult works of a somewhat different scope from his own. In the beginning of the present edition Dr. Stengel has reconstructed a large part of the sections dealing with general pathology, especially augmenting the chapters on inflammation, immunity, and animal parasites. The result is that the volume has been increased in size but the general character of the work—that of a text-book for students and practitioners—has been retained. A very difficult section dealing with bacteria and diseases due to bacteria, under which heading naturally fall the definition of immunity and the exposition of the various theories explaining its phenomena, is to our minds a good example of Dr. Stengel's work as a teacher. He has had obvious difficulties to deal with because of the mass of important work that is constantly being done in this direction. Naturally some of this work is of the nature of experiment, while

it is necessary that the teachings of a practical text-book should be largely based rather upon what has been demonstrated than upon what is supposed. Of Wright's work with regard to opsonins and of the clinical experiences due to this teaching much, for example, might have been written, but as a matter of fact very little is said. To our mind this section is undoubtedly short. The story of Ehrlich's "side-chain" theory of immunity receives considerable prominence, the author finding the theory to fit in with the facts regarding the action of toxins and the formation of antitoxins better than any other that has been suggested. We believe that this is the conclusion to which he came in previous editions and as these have been reviewed so recently in our columns there is no need now to do more than to repeat our general recommendation of the work. The section of the book on special pathology is comprehensive and gives every evidence of intention to keep the information up to date. The more abstruse theoretical points have been wisely handled so that the student is introduced in as clear a way as possible to many difficult problems, and throughout the work the numerous illustrations are thoroughly good and explanatory of the text.

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*Clinical Lectures and Addresses on Surgery.* By C. B. LOCKWOOD, F.R.C.S. Eng. Oxford Medical Manuals. London: Henry Frowde and Hodder and Stoughton. 1907. Pp. 274. Price 5*s.* net.

THIS book contains a number of addresses on different points of surgery that have already been published and those who have read them will be glad of the opportunity of securing them in a handy little volume. Mr. Lockwood's teaching is well known outside the circle of his own school, and his trenchant, shrewd, and practical addresses are worthy of the best traditions of English surgical teaching; indeed, the flavour of some of these pages is not a little reminiscent of the great teachers of the Georgian age. The contents of this collection are such as will be especially useful to the student who is proceeding to his Surgery final, although their appeal is to a far wider audience than the unqualified. We may instance the chapters on Intestinal Obstruction, Malignant Disease of the Tongue and Breast, Swellings of the Scrotum, and Exploratory Laparotomy as being of the very essence of sound clinical teaching, whilst few students of surgery will read the discourses on Clinical Reasoning and the Essentials of a Diagnosis without being the better for it. Mr. Lockwood is an ardent apostle of the pathological diagnosis as an adjuvant or corrective of the clinical opinion, and he sets forth very clearly the evidence that has led him to include a freezing microtome as an essential part of the equipment of his theatre. The chapter on Carcinoma of the Breast affords much food for reflection and in it the author presents some cancer problems that require a good deal of answering. He gives an admirable dissertation on the lymphatics of this region and also of the tongue, and comments not unnaturally on the universal neglect of this important branch of anatomy, of which we venture to say that the student of a hundred years ago was less ignorant than his successor of to-day. The book with all its good counsel contains a few hard sayings, of which we may instance these. "It is useless to think that cases can be remembered and used for purposes of comparison. A few very striking ones may leave a strong impression on the mind but in time these fade away and are lost for ever." Mr. Lockwood's admirable citations from the storehouse of his own experience in other addresses would seem to belie this assertion. Again, "Some cannot make any direct statement without qualifying it with such words as 'I think,' 'it seems,' 'a somewhat,' 'apparently,' and so forth," is an indictment which we consider too severe if it implies that such qualifying interjections are never justifiable, and we are afraid that all the preaching in the world will never convert the clinical recorder from the comparison of tumours to fœtal heads, oranges, millet-seed, golf-balls, and the like, with regard to their size. We fully sympathise, however, with the author when he would abolish the iconic employment of articles of diet in reference to the bodily excretions. We can commend the book to our readers as one in which there is much to praise and little at which to cavil.

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## LIBRARY TABLE.

*Modern Drainage Inspection and Sanitary Surveys.* By GERARD J. G. JENSEN, C.E. London: Sanitary Publishing Company, Limited. 1907. Pp. 131. Price 2*s.* 6*d.*—The substance of this book has already appeared in the *Sanitary Record* in the form of a series of articles giving practical hints upon the inspection and testing of drains and the carrying out of sanitary surveys. The articles proved valuable to their audience and have now been revised and expanded as well as more profusely illustrated, and the result is a little book that should be useful not only to sanitary inspectors but to all householders who want to understand their hygienic environment and apparatus. And such householders are becoming a numerous class, as the medical profession can testify.

*Outlines of Human Embryology.* By GEORGE REESE SATTERLEE, M.A., M.D., Instructor in Histology and Embryology in the University and Bellevue Hospital Medical College, New York. With 99 figures. New York: John Wiley and Sons; London: Chapman and Hall, Limited. 1906. Pp. vi.–173. Price 5*s.* 6*d.* net.—This little work fulfils the purpose of its aim—viz., to give to the medical student an outline of the principal facts of human embryology. Theories and unnecessary details are omitted, such subjects as karyokinesis and development of bone being omitted. The plates have been intentionally made diagrammatic, with the idea that the student should draw his microscopical pictures on the blank pages. Special attention is given to the common congenital malformations and their causes. The subjects are dealt with in the following order: Male and female genital glands, changes in ovum preceding and during impregnation, primitive germ layers and the development of the alimentary tract, of the extremities, of the vascular system, of the genital and urinary tract, and of the nervous system and its sense organs. There is appended an excellent glossary of important names and terms. Amongst the illustrations are a few micro-photographs which would have been more useful had they been on a somewhat larger scale. The word "Anlage" seems to have been taken over and adopted by American embryologists. The work is an excellent elementary epitome.

*Descriptive Biochemie mit besonderer Berücksichtigung der Chemischen Arbeitsmethoden.* (*Descriptive Bio-chemistry with Special Reference to Laboratory Methods.*) Von Dr. SIGMUND FRÄNKEL, Dozent für Medizinische Chemie an der Wiener Universität. Wiesbaden: J. F. Bergmann. Glasgow: F. Bauermeister. 1907. Pp. 640. Price 17*s.*—This work is characteristic of the thoroughness with which our German scientific colleagues pursue their subject. Physiological chemistry is expanding in all directions and as fresh studies throw new light on the great physiological processes we are brought to realise what a marvellous chemical machine is the human organism. Truly bio-chemical study can never stand still for want of a field for exploration. The work before us illustrates this by its copious indications of the direction in which further knowledge is needed. At the same time it is an excellent *résumé* of the great work already achieved and, moreover, presents to the reader a careful account of practical details. There are no shortcomings as regards the references to recent advances. We find, for example, a clear abstract of Fischer's great work on the polypeptides and their bearing on the synthesis of

albumins, of the interesting observations of Starling and Bayliss on secretin, of the work by several investigators on the peculiar functions of the pancreatic glands, and so forth. There are 34 chapters in all, the first opening with an account of the fats and fatty acids. Then follow chapters on the carbohydrates, urea, nitrogenous compounds, nucleins, albumins, hæmoglobin, pigments, ferments, and, finally, the chemistry of the secretions and excretions. There is an excellent index of both authors and subjects.

## JOURNALS AND MAGAZINES.

*The Edinburgh Medical Journal.*—The October issue of this magazine is an educational number, containing information as to the requirements of the different medical examining authorities. Among the original communications is a paper by Mr. H. Alexis Thomson describing a method of making a shelf of tissue below an unduly moveable kidney for its better fixation. Dr. Edwin Matthew and Mr. Alexander Miles record a case of excision of the spleen for traumatic rupture and the resulting condition of the blood: this showed increase of lymphocytes and a temporary eosinophilia which passed off. The case was of interest owing to the length of time which elapsed between the injury and the onset of symptoms and to the coincidence of a tear in the substance of the liver. Mr. W. J. Stuart writes on injuries to the thoracic duct in the neck and summarises 42 recorded cases.

*The West London Medical Journal.*—Mr. Richard Lake contributes to the October number of this journal a paper on the Relationship of Diseases of the Ear to General Medicine. The article is well worth reading and states, among other things, that the common form of facial paralysis often attributed to sitting in a draught is really due to affection of the ear and that vicarious menstruation in the form of epistaxis is not entirely a myth. Dr. A. W. Addinsell writes on Chronic Metritis which he divides into infective or inflammatory and arterio-sclerotic forms: hæmorrhage in the former results from muscular insufficiency and loss of contractility of the uterine vessels and in the latter from high arterial tension and pelvic congestion.

*The London Hospital Gazette.*—The October number begins a new volume. It contains an abstract of a clinical lecture on Arterio-sclerosis, signed O. G., in which, together with much other interesting matter, we are warned to be careful in the administration of nitrites in this affection owing to their destructive effects of the red corpuscles with consequent formation of methæmoglobin. A note on Radiograms by Mr. W. J. O'Donovan gives a useful hint for the interpretation of skiagraphic records of the hip-joint. In the normal joint the line of the upper margin of the obturator foramen makes a continuous curve with the line of the inner border of the neck of the femur, which curve is broken in many forms of disease.

*St. Bartholomew's Hospital Journal.*—The October issue of this journal contains an instructive little paper by Dr. T. J. Horder entitled "The History of a Case of Pulmonary Phthisis." Told without comment it yet enforces the desired hygienic points very effectively. Mr. Leslie E. Hughes records a case of strangulated appendix in a left crural canal and an anonymous note on clinical pathology contains an account of the method of examination of pleural effusions. Two amusing little roundels on medical terms deserve passing mention.

*The Broad Way, or Westminster Hospital Gazette*, contains in its October number two articles of unusual interest. The first is the record by Mr. E. G. Foote of A Hitherto Undescribed Disease. The features of the condition were bony enlargements of the skull and face, pigmentation of the skin, and a number of subcutaneous tumours resembling those of von Recklinghausen's disease. The patient was a lad, aged 15 years, mentally somewhat defective. The second article is by Dr. J. A. Braxton Hicks and calls attention to three cases proving that attempts at artificial respiration may produce in the lungs of a stillborn fœtus the appearances generally thought to indicate that the child has lived after birth. The forensic importance of this observation is obvious.

*Guy's Hospital Gazette.*—The current issue of Oct. 19th contains the fourth and last of Dr. F. G. Hopkins's valuable lectures on Urinary Constituents. The present lecture deals with the sulphates and pigments but shows signs of lack of time for a full account of these groups of substances. An address delivered by Dr. G. A. Gibson before the Guy's Hospital Physical Society gives an account of some recent investigations on the suprarenal gland and its relation to disease.

# Reports and Analytical Records
FROM
# THE LANCET LABORATORY.

### (1) ANTITHERMOLINE; AND (2) TRYPSOGEN (CARNRICK).
(MULLER, MACLEAN AND CO., NEW YORK AND CECIL HOUSE, HOLBORN VIADUCT, LONDON, E.C.)

1. Antithermoline is described as a plastic surgical dressing prepared from the finest quality of imported kaolin, washed and purified, and combined with suitable proportions of boric acid, eucalyptus, menthol, thymol, and glycerin. We find that it shows a uniformly pasty condition and it is conveniently handled for application to inflamed surfaces when the directions as to heating it are carefully followed. It represents, in fact, an excellent and scientifically prepared cataplasm. It is important to note that the kaolin has been specially prepared for the purpose and under the microscope it is seen to be finely and uniformly distributed and free from grit or uneven particles. 2. We have tested trypsogen tablets and have found them active in digesting starch which so far confirms the statement that they contain the active ferments of the pancreatic glands. The treatment of diabetes with trypsogen is based on the view that it is the impaired action of the islands of Langerhans which gives rise to toxic glycosuria.

### (1) CONCENTRATED TINCTURES (PHYSIOLOGICALLY STANDARDISED); AND (2) TABLOID BRAND CAPSULES OF CALCIUM IODO-RICINOLEATE, CAPSULE SANDAL-WOOD OIL, AND CAPSULE TEREBENE.
(BURROUGHS, WELLCOME, AND CO., SNOW-HILL BUILDINGS, LONDON, E.C.)

1. The fact that these concentrated tinctures are physiologically standardised instils confidence as to their therapeutic efficiency and their concentration admits of their being diluted to the strength and standard of the official tincture. We have received specimens of concentrated tinctures of digitalis, squill, and strophanthus, all physiologically standardised. The first two give tinctures of B.P. strength when one ounce of the concentrated tincture is made to five ounces with alcohol of 60 per cent. strength. In the same way one fluid ounce of the concentrated tincture of strophanthus when made to ten fluid ounces with alcohol of 70 per cent. strength gives a fluid corresponding to the tincture of strophanthus of the British Pharmacopœia. 2. Calcium iodo-ricinoleate is described as a new salt which is suitable for administering calcium and iodine. It is tasteless and odourless and unaffected by the gastric juice. Its chief application appears to be in syphilitic cases, the therapeutic results comparing favourably with those obtained when the ordinary preparations of iodides are given. The tabloid capsule contains three grains of the salt. The advantage of administering sandal-wood oil

in a capsule is obvious, whilst the purity of the oil is guaranteed. Each capsule contains five minims of sandalwood oil. Similar advantages obtain in the administration of terebene in a capsule. Terebene has been used in the treatment of affections of the respiratory organs, giving distinct relief. Each tabloid capsule contains five minims of pure terebene.

(1) EGMOL; (2) PETROLEUM EMULSION; (3) ADRENALIN AND CHLORETONE OINTMENT; AND (4) BLACK WASH TABLETS.

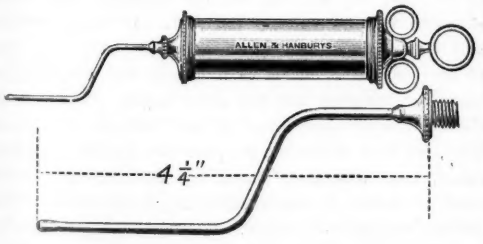
(PARKE, DAVIS, AND CO., BEAK-STREET, REGENT-STREET, LONDON, W.)

1. Egmol is an emulsion prepared on satisfactory lines and contains, it is stated, 40 per cent. of olive oil emulsified with fresh eggs and flavoured with best French brandy. We found that on extraction with ether 34 per cent. of oil was obtained. It is quite palatable and serves the purpose of a good substitute for cod-liver oil, especially for those who exhibit a repugnance to the fish oil. It is clearly a powerful nutritive agent containing egg protein in addition to egg fat and olive oil. There is no reason why olive oil should not favour assimilation and nutrition as well as does cod-liver oil. 2. The petroleum emulsion is another well-made and uniform preparation containing suitable amounts of hypophosphites of calcium and sodium. It is quite free from objectionable taste. 3. The adrenalin and chloretone ointment combines the constringent properties of the active principle of the suprarenal gland with the analgesic and antiseptic properties of chloretone. Its application, therefore, in inflammations, in hæmorrhoids, and congestions of the nose and the ear is indicated. 4 Black wash tablets are useful in providing for the easy preparation of the lotio hydrargyri nigra. For this purpose one tablet is crushed and rubbed to a paste with half an ounce of glycerine and then sufficient water is added to make the whole, which must be thoroughly mixed, up to ten fluid ounces.

# New Inventions.

## IMPROVED NOZZLE FOR AURAL SYRINGE.

WHEN removing cerumen, foreign bodies, pus, &c., from the external auditory meatus with an aural syringe it is essential for the surgeon to see exactly what he is doing. When using an aural syringe with a straight nozzle attached, even although a good light is obtainable, it is difficult, if not impracticable, sometimes to see the meatus thoroughly,




because the syringe itself obstructs the view. Messrs. Allen and Hanburys, 48, Wigmore-street, London, W., have made for me a simple curved nozzle which obviates this difficulty and allows the surgeon to have a thorough view of the meatus. Any ordinary aural syringe can be fitted with this nozzle.

ANDREW WYLIE,
Assistant Surgeon, Central London Throat and Ear Hospital.
Harley-street, W.

## AN INEXPENSIVE WATER STERILISER FOR OPERATING ROOMS.

A PLENTIFUL and readily available supply of *hot* and *cold* sterilised water is essential at all operations. Of the sterilisers in general use many are elaborate and expensive and have the further disadvantage of being attached to the apparatus for sterilising dressings. I have recently had constructed for me by Messrs. Smith and Wellstood, 11, Dixon-street, Glasgow, a very simple apparatus that makes an excellent water steriliser and is very moderate in price.

The above illustration shows its leading features. It is a nickel-plated No. 8, copper "Fortress" boiler, holding six gallons, and made with a flat bottom and with an inside sliding drainer. The lid overlaps the rim of the boiler and thus makes it dust-proof. It has a brass tap fitted with lever handle and it is furnished with a gauge-glass to show the level of the contained water. For convenience in use the steriliser is placed on a wrought-iron stand on which the boiler rests. The height of this stand is 24 inches and it has malleable iron legs with supports. Just below the boiler there is attached to the stand a shelf which carries a special Bunsen burner for heating the water. The stand and all the parts connected with it are enamelled white. The cost of the whole apparatus with stand is £5 10*s*. Two such sterilisers in an operating room would furnish all the needed hot and cold sterilised water. The one for the latter merely requires the water to be boiled the night before the operation. Next morning when cooled it will give cold sterilised water. The other one can have its contents boiled shortly before the operation, and they can be kept hot while the operation is going on. Another advantage possessed by this water steriliser to which I would draw attention is that its wide mouth allows of its being used for boiling many of the basins, trays, and smaller jugs used at an operation.

GEORGE THOS. BEATSON,
Glasgow. Surgeon, Glasgow Western Infirmary.

UNIVERSITY OF OXFORD.—The Board of the Faculty of Medicine has co-opted Mr. J. S. Fairbairn, M.A., M.B., Magdalen College, F.R.C.S. Eng., M.R.C.P. Lond., &c., as a member of the board for the statutable period of two years from Nov. 1st, 1907.—In a Congregation held on Oct. 29th the form of statute establishing a Professorship of Engineering Science was promulgated and the preamble thereof approved on a division (placet 152, non-placet 20).

# THE LANCET.

*LONDON: SATURDAY, NOVEMBER 9, 1907.*


## The Present Position of Medicine in Public Opinion.

THERE can be little doubt that at the present time no department of the healing art stands higher in the popular estimation than that of surgery. The advances in technique rendered possible by the dual discoveries of anæsthetics and of aseptic methods have led to results which deservedly appeal to the popular imagination, for surgery is direct in its methods and rapid in its applications, while its results are tangible and obvious. The very striking, indeed the almost romantic, advances in surgery have largely overshadowed those made in medicine, and, as Dr. KINGSTON FOWLER pointed out in his able and eloquent presidential address delivered before the Medical Society of London on Oct. 14th, many of the laity are frequently heard even to deplore what they regard as lack of advance in medicine. The title of Dr. FOWLER'S address, which is published in our columns this week—"The Advances in Medicine during the Past Thirty Years"—shows that his object is to remove this misconception as to the position of medicine, and he maintains that medicine "stands to-day as far removed as surgery from the position occupied in 1877." The very intricate nature of the problems with which medicine has to deal, the gaps in our knowledge of the normal functions of various tissues and organs, and the complex reactions and adjustments resulting from morbid process, combine to place almost insurmountable obstacles in the path of research in medicine; but the great army of workers, physiologists, sanitarians, pathologists, bacteriologists, and clinicians, each in his order, have by their united efforts made most notable progress within recent times.

Dr. FOWLER begins his address by reviewing the great advances made in respect of the group of infectious diseases, pointing out that in most of them the pathogenic agent has been isolated and cultivated with a result that great improvements have been made in regard to the treatment of those diseases and in the production of immunity to them. He briefly passes in review the various steps by which our knowledge of immunity and serum-therapeutics has eventuated from PASTEUR'S original work on fermentation, and points out how the researches of METCHNIKOFF and WRIGHT have helped to give a definite meaning to the vague term "the resisting power of the body" which we have so long employed. He claims that BEHRING'S researches on the antitoxin of diphtheria and its application as a prophylactic and curative agent are amongst the greatest triumphs of applied science, a view that there will be few to deny, since that discovery formed the basis upon which the whole structure of serum-therapeutics has been built. Dr. FOWLER then refers to the advances made in regard to the subject of tuberculosis since KOCH'S discovery of the tubercle bacillus in 1881 and expresses himself strongly as to the value of sanatorium treatment and the outlook for the future in connexion with that disease. The discovery of the spirochæta pallida by SCHAUDINN and the work of PASTEUR on rabies are next mentioned while the lecturer pays a well-deserved tribute to the work of one of our statesmen, Mr. WALTER LONG, in applying our knowledge of the latter disease so obtained to stamp out hydrophobia from this country. In regard to typhoid fever he instances the improvements made in the diagnosis and treatment of that disease, speaking also in hopeful terms of the anti-typhoid vaccination of Sir A. E. WRIGHT and Lieutenant-Colonel D. SEMPLE. The value of research in regard to diseases such as dysentery and Malta fever is also brought out and the excellent results of the preventive measures adopted in regard to the latter disease since it was found that the infection is spread by goats' milk are quoted. The discovery of the cytoryctes variolæ with its relation to small-pox and vaccinia is mentioned as a notable advance, while the very striking progress made in regard to tropical diseases (in which British investigators have taken a very important part) is regarded as sufficient to make the present period noteworthy in the history of medicine. In this connexion Dr. FOWLER speaks with admiration of another statesman, Mr. JOSEPH CHAMBERLAIN, for the support which he had invariably given to such researches during the time when he presided at the Colonial Office. Then he details the fascinating story of recent investigations in regard to yellow fever and quotes Colonel GORGAS, Assistant Surgeon-General of the United States army, as saying that, with malaria and yellow fever eliminated, life in the tropics will be more healthful for the Anglo-Saxon than in the temperate zones, implying that owing to the greater return for man's labour in the tropics the centres of wealth, civilisation, and population will again be in those regions as they were in the dawn of man's history. The advances made in regard to diseases of the thyroid gland and of the pancreas, together with the problems of the internal secretions which they have brought to light, are mentioned as evidence of marked progress, as also are the new researches in hæmatology. It is almost impossible to read Dr. FOWLER'S able review of progress in medicine without a thrill of pride and a glow of enthusiasm for what has been done and a hopeful aspiration towards the future, for, as he says, we are but on the threshold and future advances will far outstrip the past. It is to be hoped that this address will reach a wider public than that of our profession, for it is a simple and eloquent plea made for laborious and too often unpaid research, while the resulting developments of all this splendid and accurate work, far from increasing the pecuniary gain of the practitioner, have tended to lessen his field of remunerative work by leading to improvement in general health and to lessened incidence of disease. Statesmen and public bodies are now beginning to appreciate the importance of preventive medicine and its branches but there are many other aspects of medical science and education in which their help is needed.

In an address delivered by Sir RICHARD DOUGLAS POWELL entitled "Some of the Advances of Modern Medicine," which the President of the Royal College of Physicians

of London delivered before the Leamington Medical Society, strong claims are also made for the proper recognition of the great advance in medicine, and a record of progress is indicated of which any generation might be proud. We publish this address also at p. 1296 of our present issue. Sir RICHARD DOUGLAS POWELL goes over something the same ground as Dr. FOWLER, passing the notable advances in medicine in review chiefly from the clinical standpoint, and his enormous experience must bring conviction to us all. He refers especially to the discovery of bacterial agencies and their etiological relation to inflammation, suppuration, and the specific diseases as perhaps the greatest advance in modern medicine and one that would make the last third of the nineteenth century ever remembered. The increasing importance of a study of protozoology in relation to disease and the remarkable light thrown on many diseases as a result are also mentioned by him, while he discusses the effects of establishing collateral circulations and of relieving vascular tension and their application to the problems of disease, instancing the value of decapsulating the kidney in certain conditions of renal disease formerly treated solely by medical measures, and also the operation of "omentopexy" in relation to hepatic cirrhosis. He also refers to the recent researches upon the structure of the heart which promise to have so important a bearing in regard to certain cardiac diseases and gives an account of the work of TAWARA upon the auriculo-ventricular bundle and its distribution. This bundle, which certainly conducts the excitation wave and possibly originates it, has undoubtedly a most important action in the production of various conditions of abnormal rhythm, notably bradycardia, Stokes-Adams disease, and some forms of intermittent action, and its discovery and investigation mark a very striking advance in our knowledge of cardiac pathology. We have no desire to belittle the advances of surgery or to grudge it its well-deserved recognition but it is fair to claim with Sir RICHARD DOUGLAS POWELL and Dr. FOWLER an important record for the beneficent achievements of medicine. It should not be forgotten, moreover, that the advances made by the surgeon have tended to advance his professional emoluments as well as his reputation in public esteem.

Shortly after the delivery of the two addresses to which we have referred an interesting speech was made at Leeds by Sir WILLIAM TURNER, Principal of the University of Edinburgh and until recently President of the General Medical Council, the occasion being the inaugural dinner of the Yorkshire Association of Graduates of the University of Edinburgh. Referring to the establishment of universities in so many of the great provincial cities he expressed the hope that these bodies would exercise a great influence on the general tone of the public mind, for it was necessary that such problems as those affecting the health of the community, the social relations of the different classes, and the questions that arise between capital and labour should be dealt with by reasonable and reasonably instructed folk. In such universities ideas might start in regard to such matters which should work out for the salvation of the people. He regarded the recent distribution of learning as of the highest value and importance. Sir WILLIAM TURNER'S plea for catholicity of scope in such universities is one with which we are in full sympathy. At present in many of them, owing to the importance of the acquisition of a university degree to medical men, there is a tendency for the medical faculty to attain a preponderating influence. It is obvious, however, that the value of a university in aiding and stimulating the progress of medicine as a science is more likely to be great if its influence and scope are wide than if it is a university of one faculty. Medicine can only gain by close association with other branches of learning, both abstract and applied. Here, too, perhaps lies the remedy for the neglect of medicine as a science by the general public, for if such universities serve their proper function of stimulating learning in its widest sense, then the close association of the medical faculty with its sister sciences and with the faculties of literature, art, and economics, to instance but a few, will help to achieve for it its due meed of recognition.

## Plague in Bombay.

AN important and valuable report on the history of plague in Bombay has been written by Dr. J. A. TURNER, the able health officer of that town. In it he deals with the plague in Bombay from its commencement in 1896 and the conditions under which the annual recrudescences have prevailed and concludes with suggestions for the prevention of the disease. It appears that over 150,000 deaths have occurred in Bombay since 1896 but its influence on the teeming population has not been such as to prevent an increase in the growth of this eastern city, for the census returns show that the population in 1906 was 977,822, against 821,764 in 1896. The conditions under which the poorer classes of this vast city live must impress all who read Dr. TURNER'S report with sympathy for the gigantic work which the Bombay Improvement Trust has in hand and with surprise that the plague has not been worse than the mournful figures represent. There is to-day in Bombay a reproduction of the housing conditions recorded as having existed in England and Scotland over 100 years ago in the pre-sanitation days at the beginning of the industrial era, and for the rectification and removal of which so much time, money, and energy have had to be spent. If the Bombay Trust needs encouragement it is to be found in the fact that the terrible slums, courts, and wynds, with their dark and badly ventilated rooms, have been swept away and with them has gone the huddling together of families under as bad conditions as those now existing in Bombay. What was possible in England is also possible in Bombay.

It is not uncommon in the poorest quarters of Bombay for several families to live, to cook, and to sleep in the same room. There are large buildings, or chawls as they are called, of from four to five floors and separated from one another by only narrow passages or gullies. These chawls contain from 200 to 400 rooms, with a population living under the most insanitary conditions as to air, space, and light. Plague introduced into such warrens spreads rapidly amongst the inmates who are huddled together in a very limited area in contravention of all sanitary principles. As pointed out by Dr. TURNER, "the occupation of chawls of many floors and rooms is opposed to the habits of the

people of an eastern city. The people cannot be supervised or regulated, every room in a house is occupied generally by more than one family. All the refuse and water is thrown out into the streets and gullies. The incidence of plague follows closely insanitary surroundings, absence of domestic personal hygiene, overcrowding of insanitary areas, want of ventilation and light, and the presence of filth—in fact, the incidence of disease is directly related to the insanitary domestic surroundings. When plague attacks sanitary areas it is more easily controlled and can generally be traced to previous cases introduced there from without." Believing that bubonic plague is a direct contagion and that contact with the body either through the mucous membrane of the mouth and thorax or other mucous membrane or by the skin is necessary for the invasion, Dr. TURNER is of opinion that the personal surroundings of the individuals are the factors which contribute to the spread of plague. A summary of the experiments made by the working committee appointed by the Advisory Board on Plague proving that the rat flea is able to transmit the infection of plague from animal to animal and that its rôle in the production of the epizootic among rats is an extremely important one is supplemented by a series of observations made by the health department and illustrated in the report by maps showing the relationship of the epizootic of plague among rats and the epidemic in human beings. It was noticed that plague generally began to occur about three weeks after the first appearance of plague-infected rats, which corresponds in some respects with similar observations in Hong-Kong. A comparison of the epidemic and epizootic in Bombay in 1906 and 1907 during the epidemic season showed that with a lessened number of infected rats in 1907 there was a corresponding decline in the number of cases of plague.

Turning to preventive measures, Dr. TURNER is not inclined at present to accept the statement of the Plague Committee that human plague, except pneumonic, is not infectious in the ordinary meaning of the word and that no ordinary disinfection or isolation of plague cases is necessary. He prefers, until the subject is further investigated, to be on the safe side and as a preventive measure to destroy the germs which have been given off by the lungs and kidneys and discharges of buboes and by the fæces of fleas. Infected fleas are found in a house up to 14 days after a case of plague has died or recovered and while they are there the house is dangerous, if the view is correct that the flea is the agent that conveys the disease to man. It is known that plague bacilli remain infective in the stomach of a flea from 10 to 11 days, that the bacilli are present in the fæces, and that the bacilli remain alive and virulent outside the body, according to the committee's experiments, from 24 to 48 hours. Millions of bacilli are deposited by fleas on rats or on the host on which they may be found or on floors, walls, clothes, bedding, food, and in a room in which they may be present, or, in fact, in any place where rats have access. In these circumstances the argument that disinfection is useless has not been satisfactorily proved, nor is it supported by the incident that occasionally after disinfection the room has been reoccupied and reinfected by rats or by fresh cases introduced. Similar isolated instances occur in other infectious diseases but in small-pox, scarlet fever, or tuberculosis the fear of a fresh case being introduced or of another case occurring in the same family causes no hesitation in disinfecting the room. It is therefore, according to Dr. TURNER'S views, by the disinfection of infected houses by an insecticide as well as by the destruction of rats, temporary evacuation, and inoculation that an epidemic of plague must be met. With the knowledge now available of the channels by which plague is spread, he remarks that it must surely be possible by judicious administration to find some means of reducing the rat population and thus relieving the sufferings of the people of India without increasing ill-feeling, resistance, or friction on the part of the community; and he goes on to show that the extermination or reduction of rats previously to the anticipated outbreak of plague and the cleaning and disinfection of the haunts of rats and houses with pesterine constitute a practical measure. Pesterine, which is the name given to the residue of the distillation of crude petroleum, has been used in Bombay since August, 1906, and during a period of some nine months over 10,000 rooms have been disinfected on account of plague. It is interesting to note that in only some 0·5 per cent. of the rooms thus disinfected did cases of plague recur and of these nearly 50 per cent. were cases that might be considered to be incubating the disease at the time of the disinfection or were brought into the room from the outside. An instance is given of ten houses being treated with pesterine as a precautionary measure, their history being that of annual infection. In the year in which they were thus treated a single case occurred only in one of the houses. That house had 20 rooms; 19 were treated with pesterine. One room could not be disinfected as it was occupied by a hawker who left very early and returned very late at night. The room was always locked up and it was in this room that the single case of plague occurred.

## The Medical Department of the Local Government Board.

THE report of Mr. W. H. POWER with reference to the work of his department[1] during 1905–06 deals with matters both of national and international importance, and apparently the scope of the department's operations is widening yearly. This is as it should be but until greater power is conferred upon the Board by Parliament in the direction of dealing with recalcitrant local authorities we shall continue to find in the medical officer's reports illustrations of repeated neglect on the part of local sanitary authorities of the advice of the medical inspectors. The imperial side of the department's work is well exemplified by the account given of the mission to the Persian Gulf which was undertaken by Dr. THEODORE THOMSON at the instance of the Foreign Office. The International Conference of 1903, of which Great Britain is one of the signatory powers, proposed the establishment of a sanitary station at the entrance of the Persian Gulf by way of protecting Europe from the introduction of plague or cholera *viâ* that

[1] Thirty-fifth Annual Report of the Local Government Board, 1905–1906. Supplement containing the Report of the Medical Officer. Wyman and Sons, Limited, Fetter-lane, E.C. 1907. Price 5s. 1d.

route. Great Britain has, it seems, entertained serious misgivings as to the utility of a station in that vicinity and accordingly Dr. THOMSON was deputed to make a detailed survey of the islands and other places at the entrance of the Gulf. Apparently none of the suggested localities are altogether suitable for the purpose and, moreover, Dr. THOMSON shows by a historical sketch as to the progress of plague and cholera from the Orient that a sanitary station at or near the entrance to the Gulf would be practically useless for preventive purposes and at the same time it would become vexatious to shipping. In his view such a station would prove far more serviceable at the head of the Gulf at a spot where land and sea routes to the East converge and he quotes the analogy of the Red Sea where the sanitary service is situated not near Perim but near Suez. Dr. BRUCE LOW contributes an interesting report upon his visit of inspection to the State animal vaccine establishments in Germany. In connexion with home affairs one of the most far-reaching questions referred to by the medical officer is that which arises out of the outbreaks of enteric fever at Lincoln and Basingstoke, in both of which towns the waterworks were taken over by the local sanitary authority from an existing water company. Numerous additional illustrations of the establishment of waterworks in undesirable positions and their subsequent acquisition by sanitary authorities might be furnished and it is obvious that further control by the central authority is necessary in both instances. In so far as the establishment of waterworks by companies is concerned it is clear that Parliament is not properly advised on the subject. Although Government departments are invited to comment upon the Bills they have no adequate material at hand wherewith to criticise the proposals. The reports of medical officers of health often contain valuable data but frequently, as we have recently shown in our columns, the hands of these officers are tied and they find it difficult to comment detrimentally upon the proposals of the engineer. The best remedy is doubtless, as Mr. POWER suggests, for a medical inspector to visit and to examine the proposal on the spot, in order that his impartial evidence shall be available for the guidance of the Parliamentary Committee, unless, that is to say, water boards, as advised by the Royal Commission on Sewage Disposal, are at last to be created.

The utter inadequacy of sanitary administration in rural districts is again emphasised in the report before us and the medical inspectors must be tired of telling the story of the manner in which obviously necessary sanitary reforms are shelved by rural district councils by the process of referring them to be negatived to those august bodies known as parish councils. But as Dr. MACNAMARA has taken the subject of rural sanitary administration under his wing we will leave him for the present to evolve his scheme. The es ablishment of a sub-division of the medical department for the better control of foodstuffs is, notwithstanding the very limited dimensions of the organisation, a subject for congratulation, and already Dr. G. S. BUCHANAN, who is now in charge of this branch of the department, has issued some very useful reports upon animal tuberculosis and other matters. We are glad, too, to see that a report on the sanatorium treatment of human tuberculosis which has been drawn up by Dr. H. T. BULSTRODE will shortly be issued. The auxiliary scientific investigations undertaken under the guidance of Mr. POWER deal with subjects of great public interest in so far as concerns the scientific bases upon which is reared the fabric of sanitary administration. For example, Dr. E. E. KLEIN has been engaged upon an investigation directed to the preparation of a plague prophylactic which shall be more trustworthy than those hitherto employed, and he has also carried out some suggestive experiments as to the susceptibilities of different races of rats to plague. Dr. M. H. GORDON has had Weichselbaum's micrococcus under critical examination and as a result he regards its relation to cerebro-spinal fever as causal. He finds, however, that its identification in the mucus of the upper respiratory passages is a matter of great difficulty owing to the multiple organisms which abound hereabouts and which strongly resemble the pathogenic organism in question. The practical outcome of this finding is that in the hands of an inexperienced bacteriologist other diseases are liable to be mistaken for cerebro-spinal meningitis and, retrospectively considered, this fact may explain some of the apparent anomalies of the past. Mr. JOHN WADE, D.Sc., continues his researches into the best methods of destroying by disinfection rats and insects while the cargo of a ship is still *in situ*. He finds that by means of sulphur dioxide gas used in certain proportions, and by a modification of the Clayton gas apparatus, the best results are obtainable. He also discusses damage to cargo by disinfectants in a fashion which will prove of the greatest service to every port medical officer of health into whose districts cargoes of wheat are likely to be brought. Briefly stated, wheat in bulk is but little damaged but it is otherwise with wheat in bags. There are many other interesting investigations which we cannot now discuss.

A not inconsiderable portion of the report now under discussion deals with administrative procedures relating to vaccination and the preparation of calf lymph. For years and years the medical department, in the face of opposition and discouragement, has quietly carried on this administrative work started under SIMON and continued under SEATON, BUCHANAN, THORNE-THORNE, and now POWER. It is a record of duty of which any department may be proud. But as we read the careful epidemiological studies and the revelations of sanitary maladministration with which these annual volumes of successive medical officers abound we begin to wonder whether, in all the circumstances, it might not now be well to transfer the detailed administration of the Vaccination Act to, say, county councils and thus the energies of the medical inspectors could be expended upon more of those valuable investigations and administrative inquiries which have made the literature of the department so highly valued. We cannot help thinking when we try to read between the lines of Mr. POWER'S report that he, too, may, from time to time, have reflected in a similar strain.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bologna:* Dr. Giuseppe Ruggi has been appointed Professor of Surgery.—*Breslau:* Dr. Karl Winkler, *privat-docent* of Pathological Anatomy, has been granted the title of Professor.

# Annotations.

"Ne quid nimis."

## A JUDGE'S TRIBUTE TO THE HOSPITALS.

IN a recent action tried in the King's Bench Division by Mr. Justice Darling the jury awarded to the plantiff, a boy who had been seriously injured through being knocked down by an omnibus, £750 damages. After judgment had been given counsel raised the question of the disposal of the substantial sum named, which, he said, would be the subject of a future application to his lordship in chambers. The reply of Mr. Justice Darling, as reported in the newspapers, may be quoted: "Yes; in a case like this, where a person receives the benefits of a charitable institution and such benefits as have been conferred on this boy; where it is perfectly obvious that the boy would have died but for the accurate diagnosis of the clever house surgeon, the immediate decision that an operation was necessary, and the calling in of a skilled surgeon; and where the staff of the hospital has exercised such great skill, a substantial contribution should be made to the institution. That can be made out of the amount of the damages and the rest I can order to be invested. I will deal with this matter in chambers. I think that you agree with me, gentlemen of the jury." The foreman of the jury expressed their full approval of what his lordship had said, and it is hardly necessary for us to say that we also agree with his lordship's words. We would also thank him for an utterance which should call widespread attention to the debt of the public at large to the hospitals. The poorer classes, those most exposed by the nature of their occupations and by their conditions of life to severe accidents, and who but for the hospitals would have no means of obtaining adequate surgical assistance, find in the hospitals all that wealth places within the reach of their richer fellow-men. It may seem only just that, when substantial pecuniary payment is awarded to these to compensate them for the suffering and incapacity which have fallen upon them, there should be some recognition of the institution which has intervened to lessen the results of the injury and perhaps to win the victim back from otherwise certain death. As far as we are aware, however, Mr. Justice Darling is the first of our judges to promise in a practical form some return for that which the hospital was proved before him to have done and we venture to hope that he will have created a precedent which will be followed on future occasions of a similar nature and that other judges may also be found to remind those before them, as well as the wider public who read their observations, of the work of these great charities. Sir Edward Ridley has publicly concurred with Sir Charles Darling's view in a letter to the *Times* and suggests that in suitable cases the court should have power to allot a definite sum as damages to the hospital. In the case in question the plaintiff was a lad belonging to the humbler class of society. Had he been one of those whose position enables them to contribute to the support of the hospitals without expectation of deriving any personal benefit from their existence, his treatment would have been the same. The time may come to any man when through some sudden accident he may be threatened with immediate death and when his one chance of life may lie in the fact that he has been carried straight to the nearest hospital where surgical assistance can be rendered without a moment's unnecessary delay and in such circumstances as will best insure the success of the surgeon's intervention.

## THE BRISTOL ROYAL INFIRMARY AND THE PLURALITY OF HOSPITAL APPOINTMENTS.

THE dispute between the committee and the medical staff of the Bristol Royal Infirmary, to which we have referred upon several previous occasions, has now affected the practitioners of the neighbourhood. We have received a copy of a memorial addressed by "the undersigned members of the medical profession in Bristol and neighbourhood" to the governors of the infirmary. This document, which we are informed bears over 150 signatures, points out that if the rule passed on Sept. 24th be confirmed at the forthcoming meeting of governors it will inevitably lead to the resignation of the entire staff. The memorial concludes as follows:—

> Hitherto we have had entire and complete confidence in the skill and honour of the honorary and consulting staff of the Royal Infirmary when trusting to them the affairs of our patients; but, even if their places can be filled by others, is it to be expected that we can put the same reliance in members of the profession, whose skill as well as character is to us an unknown quantity? or that, accepting their appointments under such circumstances, we should meet them in consultation or recognise them in any professional way? We therefore earnestly beg you, for the sake of your staff, your institution, and the sick poor whom it serves, to make a point of attending the forthcoming meeting when it is summoned and to vote against this most objectionable rule in its entirety.

If the rule be confirmed and, as appears certain, the staff do resign, the authorities of the Bristol Royal Infirmary will be placed in a very awkward position, for it is evident from the tone of the memorial to which we have referred that the local medical men will not step in to fill the gaps.

## REJECTIONS AMONG ITALIAN RECRUITS.

"THE War Office," writes an Italian contributor, "in its last report on recruiting, draws attention to the decline in physical development and power among the youth of Italy. 'Debolezza di Constituzione' and 'Deficienza Toracica' were so prevalent that 30 per cent. had to be rejected. In other words, about a third of the young men were found at 20 years of age to be unequal to the fatigues of military service, fatigues, be it noted, not greater than those daily undergone by the active civilian who is sound in wind and limb. The fact is a significant as well as a sad one and is variously accounted for. Some authorities trace it to the bad upbringing all too common in the family, proletariat or bourgeoise, where vitiated air, defective underclothing, and innutritious food complete the work of inherited malaise and insanitary or excessive employment. But perhaps the cause on which well-nigh all are agreed is this: the steady drain of the 'thews, the sinews, and the muscles' of the population, agricultural and urban, by emigration. One million of the robustest youth of both sexes in the last ten years has been withdrawn from the country, leaving the propagation of the race to the weaklings who are left behind. Nor is this cause a temporary one. Year by year the outflow, from the rural districts especially, is on the increase and there is little likelihood of it being checked till the hardness of living becomes mitigated by the lightening of taxation and the heightening of wages. This, however, is a problem for the statesman whose task is not to be facilitated by the work of the professional agitator to whom the disastrous 'scioperi generali' (general strikes), now of well-nigh annual recurrence, are mainly attributable. One of these has just been averted by the 'saving common-sense' which, if left to himself, is a characteristic of the Italian labourer or factory hand, while the railway strike which threatened to scare the money-bringing tourist away and so to deepen the poverty which weighs so heavily on the Italian lower classes has thanks to the same salutary cause, been happily exorcised. Meanwhile, the Sanitary Office relaxes none of its energy and through channels recently opened up is bringing home to the Italian citizen the distinction between normal and abnormal alimentation, showing him wherein a really sustaining, not to

say restorative, diet consists and correcting the traditional reliance (in some quarters factitiously encouraged) on a purely vegetarian menu. The low resisting power of the Italian, even among the more favoured classes, to the assaults of disease has long been ascribed by the profession to the well-nigh exclusively farinaceous and leguminous fare on which he subsists—the call on the heart in the later stages of pneumonia, for example, too often finding inadequate response from the defect of the muscle-forming constituents in the diet of the patient. The recognition of this fact gives special interest to the 'Rivolto contro il vegetarianismo' (revolt against vegetarianism) which is engaging even the lay press, and which, whatever the issue of the controversy, cannot be without this advantage: that it will leave the public better informed on an essential condition of the 'vita vitalis' and tend to the consummation so devoutly to be wished—the training of youth, male and female, to be 'the intelligent custodian of its own health.'"

## ASEPTIC MENINGEAL EFFUSION WITH INTACT POLYNUCLEARS IN SUPPURATIVE OTITIS MEDIA.

THE occurrence of what may be called "aseptic pus" (aseptic puriform effusion) under certain conditions has recently been described by French observers and we have drawn attention to the fact in annotations.[1] Puriform meningeal effusion has been most frequently observed in syphilitic affections of the central nervous system, such as meningo-encephalitis, meningo-myelitis, tabes dorsalis, general paralysis, and so on. At a meeting of the Société Médicale des Hôpitaux of Paris on July 19th M. Rist stated during a discussion that he had frequently examined the cerebro-spinal fluid by means of lumbar puncture in children suffering from meningitis secondary to chronic otitis media and was struck with the fact that in a majority no microbes could be demonstrated by direct examination, by cultures, or by inoculations, although the fluid was purulent and contained abundant polynuclears, as in the most typical cerebro-spinal meningitis. In a few cases in which a necropsy was made a localised patch of purulent meningitis containing the ordinary bacteria of aural infections was found in the temporal region. The remainder of the meninges, cerebral and spinal, was intensely congested. M. Rist thought that the bacteria remained confined to the localised zone but produced inflammation at a distance, no doubt by their toxins. Aseptic empyemata have been observed in pneumonia and heart disease.[2] Such aseptic effusions are characterised by the fact that the polynuclears are intact, because they are not damaged in the process of phagocytosis. Whether this rule holds true in aseptic puriform meningeal effusions secondary to otitis media has not been verified until the following case was reported to the Société Médicale des Hôpitaux on Oct. 11th by M. E. de Massary and M. Pierre Weil. A man, aged 41 years, was taken to hospital on August 12th in a state of complete obnubilation. He answered questions only by a murmur comprehensible with difficulty. Eighteen days before admission he began to complain of tinnitus and tingling in the left ear. Ten days before admission he became deaf and four days before he began to pass into a state of torpor. On admission he appeared to suffer from intense headache, for he constantly put his hands on his forehead. There was general muscular rigidity; the neck was immoveable and Kernig's and Babinski's signs were present. The left pupil was smaller than the right. The meningeal streak was obtained. There was no aural discharge. The temperature was 102° F. and the pulse was 64. Lumbar puncture yielded puriform fluid full of polynuclears. On August 15th an abundant discharge of greenish pus from the left ear was discovered. On the following days the headache and the general condition remained the same. On the 24th improvement began. On Sept. 1st the temperature was normal and the patient answered questions. Convalescence was interrupted by an attack of mastoiditis which yielded to paracentesis tympani. During the illness lumbar puncture was repeatedly performed. It yielded a puriform liquid. Cytological examination showed almost exclusively intact polynuclears. Microscopic examination of the fluid, cultures, and inoculation experiments never revealed any bacteria. As recovery took place the polynuclears were gradually replaced by lymphocytes. This aseptic meningeal reaction consecutive to suppurative (septic) otitis media may be explained, according to the hypothesis of M. Rist, by a localised zone of infection capable of producing by means of toxins inflammation at a distance. The importance of these observations is considerable. However violent a meningeal reaction, if lumbar puncture yields a puriform fluid containing intact polynuclears its aseptic character can probably be inferred even in the absence of a bacteriological examination. The prognosis is much less serious than that of septic meningitis. In the case related above the clinical examination pointed to a fatal termination; nevertheless, recovery took place.

[1] THE LANCET, May 25th (p. 1446) and August 10th, 1907 (p. 398).
[2] THE LANCET, August 10th, 1907, p. 398.

## DRESCHFELD MEMORIAL FUND.

As already recorded by our Manchester correspondent,[1] it is proposed to found a memorial to the late Professor Julius Dreschfeld in commemoration of his distinguished career as a physician, teacher of medicine, and man of science, and a committee has been appointed to collect funds for this purpose. As so much of Professor Dreschfeld's work was carried out in association with the University of Manchester it has been decided that the most appropriate form of memorial would be the endowment of a scholarship in the Medical School of the University of Manchester. It has also been decided that a portrait or bust of Professor Dreschfeld shall be placed in the University as part of the memorial if sufficient funds be available for this purpose after the endowment of the scholarship. The committee, which is an influential and representative one (including among others Dr. Henry Ashby, Dr. J. S. Bury, Mr. Gustav Dehn, Dr. A. Donald, Dr. T. A. Helme, Sir Victor Horsley, Professor J. Dixon Mann, Sir Felix Semon, Professor J. Lorrain Smith, Professor F. A. Southam, Dr. Graham Steell, Professor W. Stirling, Dr. W. Thorburn, Dr. E. Vipont-Brown, Mr. W. Whitehead, and Mr. G. A. Wright), will be glad to receive subscriptions as soon as possible. They should be paid through the secretary, Dr. E. M. Brockbank, Northern Assurance Buildings, Albert-square, Manchester, who will duly acknowledge their receipt. A report of the proceedings of the committee will, on the completion of the memorial, be sent to all subscribers.

## THE MILK-SUPPLY OF LARGE CITIES FROM AN AMERICAN STANDPOINT.

Dr. F. M. Sandwith, the Gresham professor of medicine, a short time ago, when lecturing at the Gresham College on the subject of milk-supply, spoke highly of the conditions under which milk is sold in the United States. It is certainly true that in some districts of the United States—a very large country—the manner in which milk is guarded from source to distribution against contamination is excellent and probably in all parts of the country the arrangements and methods of transportation, of refrigerating, and of delivering milk are superior to those of England, but the medical

[1] THE LANCET, Oct. 26th, 1907, p. 1196.

profession of the United States is not prepared to regard the milk-supply of the country as ideal. Several papers on the milk-supply of large cities were read in the Section on Diseases of Children at the last meeting of the American Medical Association, which showed that the pasteurisation of milk is done in a wholesale manner that leads to possible abuses. Dr. Alexander McAlister, for example, referred to pasteurisation in the following terms: "The stringent laws against the employment of milk preservatives have taken from the hands of the milk middleman a cheap and most effective expedient for leisurely marketing his wares irrespective of their quality. As a result he has fallen back on the more expensive process of pasteurisation. This is now, unfortunately, too much in the limelight of popular opinion. Whatever may be said justly in favour of pasteurisation for immediate use as practised in families and in special plants, nothing can be said to the credit of milk pasteurised on a commercial scale to facilitate distribution and sale. The process does not remove the germs it destroys; indeed, does not destroy those of greatest danger and only facilitates subsequent infection and contamination should the opportunity arise." Dr. Henry Enos Puley in a paper contributed to the same section of the association referred to pasteurisation thus: "Milk when pasteurised is so changed in its biologic life-giving properties as to make it unfit for infant feeding for any length of time. Clean milk is infinitely better than a cooked milk. I believe that pasteurisation of milk should cause it to be classified with canned foods which come under the head of embalmed beef minus the chemicals and that the Pure Food Commission should take the matter in hand." There is another point. The process of pasteurisation lulls the public into a belief that milk so treated is rendered good in spite of the manner in which it is subsequently handled. As a matter of fact, pasteurised milk requires as careful treatment as clean milk to prevent further infection. In New York City, we understand from a frequent correspondent, there has been recently a strong popular demand for pasteurisation of milk on a large scale, in which demand many medical men joined. But the health department of that city, after conferring with members of the medical profession and the New York Milk Commission, has preferred to ask for a large sum to be expended in the inspection of dairies rather than to recommend municipal pasteurisation. It appears that the placing upon the market at a moderate price of a clean wholesome milk is nearly as difficult a problem in America as it is in England.

## PROPOSED UNION OF SANITARY AUTHORITIES.

WE are informed that a conference of representatives of sanitary authorities will be held in the Council Chamber, Caxton Hall, Westminster, at 11 A.M. on Friday, Nov. 15th, for the purpose of considering the question of the establishment of a "supreme national health authority." In THE LANCET of May 25th, p. 1445, we recorded a resolution passed by a conference of representatives of sanitary authorities in Northumberland and Durham, which met at Newcastle on May 17th, to the effect that it was desirable that a permanent union of the sanitary authorities of England and Wales should be established in the interest of the public health; and in THE LANCET of August 24th, p. 542, we reported the second meeting of this committee, at which its numbers were increased by other medical officers of health and councillors. The outcome of this meeting is the conference which will take place in Westminster next week, at which motions will be submitted recommending the establishment of such a union as that which was advocated in Newcastle earlier in the year and which will have for its main objects the securing of harmony of interest and uniformity of action among sanitary authorities in general on matters relating to the public health, the stimulation and concentration of effort for the purpose of effecting necessary sanitary reforms, the encouragement and promotion of the study of practical hygiene and the education of public opinion in the matter, and the systematic study of the etiology of disease with a view to its prevention. It is intended that, unless hereafter determined otherwise, the proposed union shall be non-political in its functions.

## PREVAILING DISEASES IN NYASALAND.

Dr. H. Hearsey, principal medical officer in the Nyasaland (late British Central Africa) Protectorate, devotes a section of his report for 1906–07, just received at the Colonial Office, to notes in regard to the prevalence of sickness in different seasons of the year and the general character, and so on, of the diseases prevailing. Amongst his observations are the following. 18 cases of blackwater fever have been treated during the year, with two deaths, as compared with 15 cases and seven deaths last year. Blackwater fever is most prevalent at the termination of the wet and beginning of the cold season—i.e., during the months of February, March, April, and May. In Nyasaland certain facts connected with the disease deserve consideration: 1. Natives never suffer from this disease at any period of their life. A true case of "blackwater" has never been recorded in a native. Sikhs and Asiatics generally all suffer. Two cases of blackwater fever in half-caste children have been recorded. 2. Every person attacked has at some time previously (and generally only a short time previously) suffered from malaria. Clinical evidence and repeated blood examination prove this to be the case. Most frequently those persons are attacked who have suffered from repeated attacks of malaria. 3. Persons who have never had malaria never get blackwater fever. 4. In districts where malaria is most intense and where anopheles mosquitoes are most numerous blackwater fever is most common. 5. In very few cases can the influence of quinine be excluded as the exciting cause of the attack. In 50 cases collected quinine had been taken a few hours previously in every case. Cases have occurred in hospital where a patient with the typical clinical symptoms of malaria and with parasites in his blood has developed "blackwater" on being given five grains of quinine for the first time. 6. In many cases when quinine is given after the initial attack "blackwater" again supervenes, this being presumably the only apparent disturbing factor. Regarding the question as to whether quinine should or should not be given, experience in this country has shown that quinine should never be given as a routine treatment. If after the third day, when the urine has cleared and the temperature remains high, and if malarial parasites are found in the blood quinine may be cautiously administered, preferably by intra-muscular injection. If an examination of the blood gives negative results quinine should not be given. There were 305 cases of malarial fever amongst Europeans, with seven deaths, as compared with 189 cases last year with four deaths. Of this number 12 were returned as malignant tertian, 38 as "remittent," six as "pernicious," one as a fever of "irregular" type, and 148 as "type undiagnosed." Malarial fevers reached their highest intensity in the quarter ending March. This corresponds with the season showing the heaviest rainfall, combined with a daily high temperature. Anopheles mosquitoes are abundant during this season. The malarial fevers of this country are generally "irregular" in type and in many cases, especially in first infections occurring on the plains, tend to become "subcontinuous." Five cases were reported from one station; four during the month of January, in which grave pernicious symptoms developed, all four patients dying in a state of hyperpyrexia. There were 57 cases of yaws returned, with

one death. In one instance the subject was a European—a missionary and the first recorded case of its kind—where the infection was distinctly traceable to the accidental inoculation of a finger. The disease cannot be said to be widely prevalent, though cases are occasionally to be met with all over the country. In June last, however, the medical officer of Fort Johnston reported that yaws was very prevalent in villages on the south-west arm of Lake Nyasa. A segregation camp was formed and 38 cases were isolated, the subjects having suffered from the disease for varying periods. The majority of the cases were husband and wife or mother and children. The clinical features of these cases were as follows. There was neither fever nor debility; headache and rheumatic pains in the limbs were marked and persistent. There was no regular enlargement of lymphatic glands; the lesions were multiple and in various stages of development. Fresh crops of pustules made their appearance from time to time and ulceration was noted in ten cases. The localities involved were the chest, arms, face, neck, and axillæ, nearly as frequently as the scalp. The feet were affected in three cases. There was no involvement of the mucous membranes except by continuity at the nostrils, lips, and anus. There was no evidence of any syphilitic lesion. Deformities of the hands were present in some cases, resembling syphilitic or chronic ulcerative dactylitis. The treatment adopted was mercury and iodide of potassium, with local cleansing of the sores and the application of sulphate of copper and mercurial ointment (unguentum hydrargyri nitratis) for the ulcerations. Six months after treatment 11 cases had cleared up, 12 showed marked improvement with diminution of pain, eight showed slight improvement and a decrease in the number of lesions, four showed no improvement, but in all the cases treated, with the exception of two, there was marked diminution of pain. There were 30 cases of beri-beri with eight deaths. 24 of these were "repatriates" from the Johannesburg mines who were detained on examination by the medical officer of Chiromo and isolated under treatment until found to be free from symptoms. Four cases occurred in Fort Johnston district, where a serious epidemic had taken place in 1905, but there was no recrudescence of the disease in epidemic form in any part of the Protectorate. Other paragraphs in the report refer to enteric fever, dysentery, smallpox (which has much decreased under systematic vaccination), tick fever and conjunctivitis, together with some remarks on veterinary medicine. As to sleeping sickness, no case has been reported in the Protectorate up to the present. In view, however, of the danger of the introduction of infection by reason of the existence of a large traffic from Karonga to the territory of the Tanganyika Concessions and to the mines of North-Western Rhodesia a Government medical post has been established at Karonga where natives returning by the route referred to are systematically examined.

## CELERY.

"CHEESE and celery" is a quite popular dietetic collocation and it is interesting to inquire at the season of its perfection into the composition and properties of celery which may possibly account for its favourable reception in the dietary. Celery, however, is not always, of course, eaten raw, for stewed celery is an excellent and wholesome dish, partaken either alone or with meats. According to analysis celery can possess little nutritive value, for over 93 per cent. of the vegetable is water with a little oil, while the balance is made up of some 3·5 per cent. of starchy material, 1·5 per cent. of nitrogenous matters, 1 per cent. of cellular fibre, and 1 per cent. of mineral salts. Celery would, therefore, seem to play almost exclusively the rôle of a condiment rather than that of a food; it is its flavour which makes it popular. There seems to be little doubt, however, that owing to the aromatic oil which it contains celery acts as a mild carminative and stimulant. This property may possibly account for celery eaten raw agreeing very well when eaten with cheese. It is well known that the difficulty of digesting cheese occurs in the stomach and that when it is passed into the intestine digestion proceeds as easily and as completely as is the case with meat. Carminatives—as, for example, certain essential oils—favour muscular contraction and therefore favour the continuity of the digestive processes, and there is no reason why the aromatic oil present in celery should not be classed with the carminatives. The oil in celery is allied to the oil of parsley or apiol, which is a well-known carminative, stimulant and diuretic; celery is further reputed to be "good for rheumatism." In an old recipe occurs the following: "The celery should be cut into bits and boiled in water until soft, and the water should be drunk by the patient. Put new milk with a little flour and nutmeg into a saucepan with the boiled celery, serve it warm with pieces of toast, eat it with potatoes, and the painful ailment will yield." Here we are on less certain ground but at least this procedure amounts to treatment with alkaline salts which so far appears to be rational. Celery contains sodium and potassium salts and also a distinct amount of iron. In spite of the presence of the substances enumerated there can be little doubt that many persons find celery, at any rate if eaten raw, indigestible, which is not surprising when its stringy cellular character is borne in mind. The best celery, of course, is that which is crisp or brittle but even then there is fibre present which cannot be appropriated by the human organism. Still, the fibre of vegetables serves a useful purpose in promoting a stimulus to intestinal movement.

## SEPTICÆMIA SECONDARY TO ABSCESS IN THE INTESTINAL WALL.

IN the *Glasgow Medical Journal* for October Dr. John Henderson has reported a case of septicæmia due to an unusual and hidden cause which baffled diagnosis. A man, aged 63 years, was admitted into hospital on April 25th, 1907, with dyspnœa and swelling of the legs. He described himself as perfectly well until the 21st, though for some time he had complained of dyspnœa on exertion and for about a week of a cough. On admission there were considerable œdema of the lower limbs and trunk and slight epigastric pulsation. The temperature was 97·4° F. and the pulse was 80 and of low tension. The apex beat was neither visible nor palpable. The cardiac dulness extended one inch to the right of the middle line, one and a half inches to the left of the nipple line, and upwards to the fourth rib. The cardiac sounds were ill-defined. The chest was barrel-shaped. The respiratory murmur was harsh and expiration was prolonged. Posteriorly there were doubtful impairment of percussion at both bases and scanty moist râles. The urine contained a trace of albumin. Failing heart, due to myocardial degeneration, was diagnosed. Under treatment satisfactory progress was made for a fortnight. Then the evening temperature rose to 100·8°, returning to normal next day. Afterwards the temperature was intermittent, rising in the evening to 103° and 104° and falling in the morning to about 97°. Rigors occurred—one on May 12th, two on the 13th, two on the 16th, one on the 17th, one on the 18th, and one on the 20th. Coincident with the rise of temperature diarrhœa occurred, the maximum number of stools in the 24 hours being five. The stools were copious and pale and at the commencement contained small quantities of bright-red blood which was unmixed with the fæces. There were no abdominal tenderness and no jaundice, though once a trace of bile was found in the urine. In spite of the considerable daily range of temperature the patient did not appear to be seriously ill,

though he steadily became weaker. He was rather dull and stupid and on the 17th became delirious. On May 10th the quantity of urine in the 24 hours was 57 ounces; in the next nine days it fell to 15 ounces and regularly contained a trace of albumin. Death occurred on the 20th. During the illness the blood was examined daily and showed polymorphonuclear leucocytosis which during the febrile period amounted to 13,000 and on the day before death to 35,000. Careful and regular physical examination failed to determine the cause of the pyrexia. The cardiac area apparently returned to normal and though the heart sounds were ill-defined no murmurs were heard. The temperature, irregular rigors, and polymorphonuclear leucocytosis suggested suppuration but no evidence of any abscess could be found. The patient had never been abroad and careful examination of the blood for the malarial parasite was negative. Though the absence of a murmur did not exclude endocarditis, yet combined with the absence of symptoms of an embolic focus it was strongly against such a diagnosis. The pulmonary signs appeared to be of hypostatic origin. Thus the question was between idiopathic septicæmia and septicæmia secondary to some unknown cause. The course of the temperature and the rigors seemed to point to some focus of suppuration. The only localising symptoms were the diarrhœa and the blood in the stools. The possibility of absorption from an ulcerated intestine through the portal system was therefore kept in view. But there was no hepatic enlargement, tenderness over the liver, or jaundice, though a trace of bile had once been found in the urine. At the necropsy six ounces of clear serum were found in the pericardium. The muscle of the heart was pale and soft. There was slight atheroma of the aorta and coronary arteries. The lungs were markedly œdematous and adherent to the chest wall from fibrinous pleurisy with a slight tendency to pus formation. The spleen was large, congested, and friable. The liver showed cloudy swelling. At the lower end of the sigmoid flexure or upper end of the rectum was an annular ulcer which had led to perforation and abscess in front of the bowel. The abscess contained a rounded body of whitish colour and stony hardness about half an inch in diameter and largely composed of calcareous matter. The comparative insignificance of the lesion which was the source of infection is noteworthy. It did not appear that the small quantity of pus associated with the fibrinous pleurisy could have caused the symptoms of septicæmia.

## THE INFLUENCE OF A MEAT DIET ON THE KIDNEYS.

SOME observations of the effects of a meat diet on the kidneys in rats are recorded by Dr. D. Chalmers Watson in the *International Monatschrift für Anatomie und Physiologie*, Band XXIV., p. 197. The results are much the same as those which we recorded in THE LANCET of Oct. 12th of this year. The diets employed were five in number—viz., rice boiled in water, oatmeal porridge made with skim milk and water, uncooked horse-flesh, uncooked ox-flesh, and a control diet of bread soaked in skim milk. The determination of the chemical composition and heat values of these foods and the observations on the nitrogenous excretion of the animals were made by Dr. Andrew Hunter, and the histological investigations by Dr. G. Lyon. The general conclusions arrived at are that the prolonged administration of a flesh diet (horse-flesh and ox-flesh) to rats is followed by hypertrophy of the kidneys, and that this hypertrophy is more pronounced in the second generation of meat-fed subjects. In regard to the histological changes, Dr. Lyon found in the great majority of the animals fed on a diet of horse-flesh changes in the epithelial structure similar to those seen in recognised toxic conditions, in some cases of such a degree as to constitute a catarrhal nephritis, the earliest changes being found in the ascending limb of Henle's loop which appears to be the most vulnerable of the secreting tubules. Similar changes of a less pronounced type were present in a small proportion of the rats fed upon ox-flesh, and even in those which appear normal when examined by ordinary staining methods the application of Muir's hæmatoxylin-eosin stain revealed an alteration in the secretory granules of the renal epithelium. Neither in the first nor second generation of flesh-fed animals were any cirrhotic changes observed. The observations on nitrogen metabolism show that the flesh diet throws a special strain on the functional activity of the kidneys so far as regards nitrogen excretion. The hypertrophy of the kidneys found in these experiments is of considerable interest; the histological changes are more difficult to interpret, more especially as they appear to be of toxic nature; moreover, no explanation is forthcoming of the greater effect in producing them of horse-flesh over ox-flesh.

## THE AVERSION OF THE THREATENED RAILWAY STRIKE.

THE happy aversion of the threatened railway strike by the intervention of the President of the Board of Trade has resulted in a universal feeling of relief of tension. It is not within our province to discuss the economic results of a prolonged truce between the companies and their employees to the nation, but medical men have as much reason as most people to be thankful for the issue. Railway stock has for many years been looked upon as a standard investment for the savings of the professional classes who are content with a moderate and safe return for their capital, and there are doubtless many members of our profession to whom a marked depreciation in these securities would have been a most serious matter to face. It is to be hoped that the restored confidence in the railways resulting from the recent arrangement will place our readers speedily out of the reach of anxiety on this count. We have already pointed out the serious dangers which must accrue to the health of the nation from the shortage of fresh food-supply which would inevitably follow on a widespread railway strike and we fully share the relief of the nation that that danger and many other almost intolerable inconveniences have been spared us, at any rate for a substantial period of time. Lastly, and this is the most important consideration of all, the amount of sickness that would have been caused among the employees had the duel been fought to the death must have been very great.

## ELECTROLYTIC DISINFECTANT.

AN interesting statement in regard to the cost of producing electrolytic disinfectant at the Poplar installation has been presented to the public health and housing committee of that borough. The electrolysing plant, after 20 months' running, is reported to be still in good working order, turning out 185 gallons of fluid in eight hours at an average strength of 4·5 grammes of chlorine per litre. It has not been found necessary to renew any of the zinc electrodes which, judging from their present condition, promise to be useful for a further period of 20 months or longer. Already a considerable saving has been effected, which it is anticipated will be greater in regard to the cost of disinfectants to the borough since now that the system is in working order the expenditure for wages, bottles, corks, and cartage will be less. The estimated cost of carbolic disinfectants for 20 months is £1654 18*s.* 2*d.*, while the cost of electrolytic fluid for the same period has been £382 0*s.* 11*d.*, showing a saving for disinfectants used in the borough of £772 17*s.* 3*d.* This estimate does not take into account any saving which may have been brought about through supplying the works department with 12,301 gallons of electrolysed fluid for watering roads and flushing gullies,

sewer manholes, and market places, for which as a deodoriser the fluid is particularly well adapted. Moreover, by treatment with a trifling quantity of caustic soda, a process carefully worked out by Mr. F. W. Alexander, the medical officer of health of the borough, the electrolysed fluid is brought into a perfectly stable condition, the strength in terms of available chlorine showing no appreciable diminution after being kept for 12 months.

## THE ROYAL SOCIETY OF MEDICINE.

THE council of the Royal Society of Medicine has decided that the foundation of the society shall be celebrated by an inaugural dinner which is to be held at the Hotel Cecil on Tuesday, Dec. 3rd, at 7 for 7.30 P.M. The society will entertain a number of distinguished guests and it is expected that a very large number of Fellows and Members will be present. At the meeting of the Medical Section of the society on Tuesday last the interesting debate on Pneumonia was brought to a close. We shall publish the debate next week.

## TREATMENT OF ILLUMINATING-GAS POISONING BY DIRECT TRANSFUSION OF BLOOD.

IN the *American Journal of the Medical Sciences* for October Dr. George W. Crile and Dr. Carl Lenhart have suggested a new treatment for poisoning by illuminating gas (carbonic oxide poisoning)—direct transfusion of blood. As is well known, the affinity of the carbon monoxide for hæmoglobin is much greater than that of oxygen which it displaces, thus producing asphyxia. However, when oxygen is present in very great excess carbon-monoxide hæmoglobin is decomposed and oxyhæmoglobin is formed. Hence oxygen inhalation is a rational treatment. An interesting experiment was performed by Dr. J. S. Haldane: he placed mice under a pressure of two atmospheres of oxygen, so that sufficient of the gas became dissolved in the blood independently of the hæmoglobin to support life. Sufficient carbon monoxide was present to saturate their hæmoglobin. Under these conditions they showed no symptoms, proving that carbon monoxide has no direct toxic action. But when they were removed into the air they died from asphyxia in consequence of their hæmoglobin being combined with carbon monoxide. If patients poisoned by carbon monoxide are breathing well when rescued the blood probably becomes freed from the gas in about three hours and danger is probably passed in an hour. Venesection and transfusion of defibrinated blood have been performed but their value is doubtful. Dr. Crile and Dr. Lenhart performed a number of experiments to test the value of direct transfusion of blood. 16 dogs were anæsthetised with ether and poisoned with carbon monoxide. The carotid artery was attached to a manometer with a style writing on a recording drum. In all cases the respiration, and in eight the heart also, stopped before resuscitative measures were begun. They had to be begun immediately the heart stopped, for resuscitation was never accomplished when the heart had stopped for any length of time. In six cases the heart had almost stopped with a blood pressure varying from eight to 20 millimetres of mercury. One animal was treated by bleeding, manipulation of the heart, and artificial respiration, and died. Three animals were treated by bleeding, intravenous injection of saline solution, manipulation of the heart, and artificial respiration, and all died. Two were treated by manipulation of the heart and artificial respiration and died. Ten were treated by bleeding, direct transfusion of blood, manipulation of the heart, and artificial respiration. Only three died. In six of the dogs treated by this method the heart had stopped beating and three of these were saved. Thus direct transfusion of blood proved the only efficacious method. These experiments obviously suggest the advisability of performing direct transfusion of blood in cases of carbonic oxide poisoning in man when a fatal issue is threatened.

## THE NEW MASTER OF DOWNING COLLEGE, CAMBRIDGE.

AS we announced in our columns on August 10th last, Mr. Howard Marsh, Professor of Surgery in the University of Cambridge, has been appointed Master of Downing College. The election has now been made public in a formal manner. We congratulate Professor Marsh on the high compliment paid to him, for it is most unusual for the Universities of Oxford and Cambridge to elect to the headship of a house one not educated by themselves. We congratulate also the members of the University of Cambridge on securing in so close a manner the services of the distinguished surgeon and popular gentleman whom they have already made their professor of surgery.

## THE OPERATIVE TREATMENT OF CHRONIC CONSTIPATION.

THIS subject has been engaging the attention of the Pasteur Institute in Paris for some time and one of the bacteriologists of that institution, Dr. Michel Cohendy, is now in London investigating the bacterial flora of the intestinal canal in persons from whom the large bowel has been removed. Dr. Cohendy attended at Guy's Hospital on Nov. 4th and saw Mr. W. Arbuthnot Lane perform a colectomy upon a patient suffering from chronic constipation of such an aggravated kind that life was a burden to her. The operator joined the lower end of the ileum by an end-to-end anastomosis with the upper end of the divided rectum at its junction with the sigmoid flexure. Dr. Cohendy made a close inspection of several patients who had been restored to health and work by the operation and about 15 medical men from the continent and America kept these patients a long time examining and cross-examining them in regard to every detail. The Pasteur Institute has arranged with one patient who is a fair example of the good results of this operative procedure to go to Paris and to remain under the supervision of Professor Metchnikoff, so that bacteriological investigations may be more conveniently and completely carried out.

THE Department of Public Health of Queensland, in a bulletin dated Sept. 28th, states that the patient who arrived at Brisbane with plague on Sept. 16th and was removed to hospital died on Sept. 21st. As regards the Cape Colony, the medical officer of health of the Colony states that for the weeks ending Oct. 5th and Oct. 12th no case of plague was discovered in the Colony. As regards the Mauritius, a telegram from the Governor received at the Colonial Office on Nov. 4th states that for the week ended Oct. 31st there were 11 cases of plague and 7 deaths from the disease.

IT may be well again to remind our readers that any motion which it is desired to bring before the annual meeting of the Royal College of Surgeons of England on Thursday, Nov. 21st, must be signed by the mover or by the mover and other Fellows and Members and must be received by the secretary not later than Nov. 11th. A printed copy of the agenda will be issued to any Fellow or Member who may apply for it on or after Nov. 18th.

Mr. W. H. Power, C.B., F.R.S., principal medical officer to the Local Government Board, has been awarded the Buchanan medal of the Royal Society for his eminent services to sanitary science.

Sir Arthur Conan Doyle has had conferred upon him by the Sultan of Turkey the Second Class of the Medjidieh. Lady

Conan Doyle received at the same time the Order of the Chefakat.

THE Master and Wardens of the Society of Apothecaries will entertain guests at dinner in the Hall of the Society "to meet the Lord Mayor" on Tuesday, Nov. 19th.

## RIFLE-BULLET, SHRAPNEL, AND SHELL WOUNDS IN THE RUSSO-JAPANESE WAR AND COMPARATIVE CASUALTIES.

A REPORT read by M. I. Glagolieff before the Society of Medical Men of Krementchug appears in the *Chirurgia* of Moscow. It deals specially with wounds in the soft parts of the extremities as well as in the head, neck, and trunk that were treated in the Fourteenth Kharbin Collecting Hospital which began its operations at Lyaoyan in July, 1905. From Lyaoyan it was transferred to Kharbin and thence to Vladivostok. It dealt with 5956 cases of sick and wounded, of which 2290 were wounded. Of these, 2273 were the victims of firearms and 17 only (0·7 per cent.) of cold steel. The wounds were distributed as follows:—

| | | | |
|---|---|---|---|
| Lower extremities ... ... | 616 | (26·9 per cent.) | 71·3 per cent. |
| Upper " ... ... | 606 | (26·4 " ) | |
| Joints ... ... ... ... ... | 412 | (18·0 " ) | |
| Thorax ... ... ... ... ... | 177 | ( 7·7 " ) | |
| Head ... ... ... ... ... | 122 | ( 5·3 " ) | |
| (of which 32 were with fractured skull) | | | |
| Face ... ... ... ... ... ... | 100 | (4·3 per cent.) | |
| Pelvis ... ... ... ... ... | 84 | (3·6 " ) | |
| Vertebræ and Back ... ... | 66 | (2·8 " ) | |
| Neck ... ... ... ... ... | 44 | (1·9 " ) | |
| Abdomen ... ... ... ... | 44 | (1·9 " ) | |
| Post operation wounds ... | 19 | | |

The total number of deaths in the hospital was 18, of which eight were cases of wounds, or 0·35 per cent. Most of the wounds resulted from rifle fire, then shrapnel, and lastly splinters of shells. The rifle-bullet wounds took the form of through-and-through perforations or canals, blind perforations or canals, or of open wounds with rough or smooth edges. The through-and-through perforation was the most frequent. Of 100 cases of wounds in the extremities taken without selection nine were surface wounds, three were blind perforations, and 87 were through-and-through perforations. After further detailing the classification of wounds, M. Glagolieff made the observation that according to the hospital reports in cases of wounds from distances of about a verst and over the entry and exit openings differed but little, whilst the entry was more frequently the larger. At short distances the exit orifice was more frequently the larger. These openings were usually insignificant and were mostly of a diameter of (or even less than) the bullet. The exceptions were cases where the bullet did not hit diametrically, such as ricochets. There was no sign of injury round the openings of the typical wounds except just at the edges.

Fresh wounds were never seen; there was always an interval of from three to seven days between the infliction of the wound and the arrival of the patient in hospital. Patients arrived usually straight from the battlefield with their wounds, generally speaking, in one of the three following conditions: (1) both orifices cicatrised; (2) one only so, with the other like a clean wound; and (3) one orifice cicatrised or like a clean wound and the other suppurating. Nos. 1 and 2 conditions usually required from two to three and a half weeks to heal. No. 3 class would take about three weeks to heal. The suppuration was easily arrested and otherwise the healing was as easy as in Nos. 1 and 2.

The cases of wounds consisting of blind perforations were few and resulted usually from bullets either spent or interrupted in their course by hard objects, such as stones, and the consequent disfiguration in the bullet produced a correspondingly irregular wound. In a very few cases the bullets were not found but these wounds also healed easily, especially where there were no bullets.

Surface bullet wounds, chiefly in the head, were more common. They varied from 1 to 10 centimetres long and from 0·5 to 0·3 centimetre wide. Sometimes when the bullet struck the muscle diametrically the wound would be very wide. Such gaping wounds were found in the forehead, temple, and in the extremities. Small wounds of this category usually healed by cicatrising but the larger ones healed only after a second bandaging in most cases.

Where suppuration was present in the three categories above described it was mostly in cases of imbedded bullets, sometimes in case of torn wounds, and least of all in cases of through-and-through perforations. In the cases of through-and-through perforation the suppuration appeared to result from bleeding deep in the wound. Most of the instances of suppuration in blind perforations occurred where the bullet was present, particularly if disfigured through ricochet or other cause. It is interesting to observe that often, almost immediately next the bullets found in the tissue under the skin when extracted, suppuration was found even after both the opening of the wound and the perforation had well cicatrised.

M. Glagolieff concluded his observations on rifle-bullet wounds by remarking the very unfavourable course followed by most of the wounds in the soft parts of the wrists, arms, feet, and fingers. Wounds in these parts were often irregular with rough edges. These wounds frequently ran a bad course, accompanied by suppuration and inflammation which affected even uninjured parts. Lymphangitis was frequent.

In all the cases that came under his observation he did not find one in which the bullet carried part of the victim's clothing into the wound, which was so common with the old, large bullet. It was, however, far otherwise with the shrapnel-bullet wounds that he describes. He attributes 25 per cent. of all the wounds to shrapnel. He attaches importance to this note, as he thinks the chief military medical department failed to establish the relative importance of rifle-bullet and shrapnel wounds in the statistics published after the war—at least, they are not indicated in the charts. He continues that the late Russo-Turkish war showed only 4 per cent. of wounds from shells. But now this is all changed. Besides through-and-through perforations, blind perforations, and surface wounds all as in the case of the rifle bullet, the shrapnel also made irregular wounds with torn edges. The form of the blind perforations was the prevailing shrapnel wound. The more frequent imbedding of the shrapnel bullet in the body is very striking. The size of the entry and exit of the bullet into and out of the body respectively was from 1·1 to 5·2 centimetres diameter, in some cases the entry being larger than the exit; whilst, again, the former would in some cases be fairly round and the latter longer and wider. The blow of the shrapnel bullet generally made a wound 5, 7, or 10 centimetres long and 2, 3, or 5 centimetres wide. Wounds from shrapnel in the hands, feet, and fingers were usually irregular with broken edges. For the scab to form and the wound to heal at the first bandaging was rare. These wounds took longer to cicatrise than wounds from rifle bullets and they suppurated also in more cases, no matter what the kind of wound. They also more frequently gave rise to swelling and subcutaneous effusion of blood. The causes of these aggravations must be supposed to be the more frequent imbedding of the bullet in the body, the greater tearing of the tissue, &c., the more extensive bleeding, and finally the frequency with which the larger shrapnel bullet took bits of shirt, uniform, &c., into the wound. He remarks in conclusion, with respect to shrapnel bullets, that often as they were extracted in no case did they show any material deformation.

There were very few cases of wounds from shell splinters. When extracted from the wounds they were seldom larger than shrapnel bullets. They were pieces of dark metal, very irregular in shape, and often with several sharp points. The wounds which they caused were mostly irregular, approaching to roundness and varying in size from 0·5 by 0·75 centimetre to 1·1 by 5·2 centimetres. The hospital had no cases of very large wounds of this class. The wounds were usually blind perforations of varying depths. Through-and-through perforations were rare. Where the muscles were torn the wounds gaped wide. The peculiarity of these wounds was their multiplicity. Some of the patients would be struck in ten or more places, but generally the wounds were small and were not deep. The small wounds cicatrised really enough but most of the large ones suppurated—particularly where the flesh was much torn—and healed slowly.

M. Glagolieff then turns to wounds of the soft parts complicated with injury to the large blood-vessels. The remarkable feature of war subsequently to the adoption of small-calibre arms has been the rarity of bleeding after the wounds

and the formation of traumatic aneurysms which has been observed by many authorities who witnessed the first bandaging of the wounded at the front. The wounds quickly close up and get choked with blood, so that if a blood-vessel is broken the blood cannot escape. It percolates into the surrounding tissue till the exterior pressure is equal to the interior, and with partial injury to the wall of the vessel in case an opening is made, the blood flows to the tissue nearest the rent and gradually pushes it to one side. Here a hæmatoma is formed. The blood coagulates at its periphery and remains liquid in the middle and thus an arterial traumatic aneurysm is formed. Such cases should be subjected to primary bandaging on the field of battle, says Professor von Manteuffel. M. Glagolieff then relates a number of such cases that reached the hospital in the rear. In all cases of arterial aneurysm the wounds healed with the first bandaging. In some cases the swelling gradually increased, then pain followed and became worse till it was unbearable, probably because of the pressure of the hæmatoma on the nerves. In two cases this led to a successful operation, but in a third case, after ligaturing the deep artery of the hip, the feet and knees became benumbed, and on the seventeenth day after the operation amputation at the lower third of the thigh was resorted to. The patient recovered. There were very few cases of injury to the great nerves. These are quoted without comment.

There were only two or three cases of erysipelas and only five of tetanus. The most difficult operations were those on the aneurysm involving the ligaturing of the injured vessel and the removal of the hæmatoma. M. Glagolieff concludes as follows: "Most of the rifle-shot wounds were aseptic and the blood in the perforations thickened so that a scab soon formed and excluded contagion. The shrapnel wounds greatly resembled those of the old large leaden bullets, including the tendency to carry bits of textile (clothing) into the wounds. Experience shows that wounds probed at the first-aid stations and sanitary wagons and from which bullets were extracted on the spot frequently suppurated; hence it may be concluded that excepting the application of aseptic protective bandages the wounds should not be treated either at the front or in sanitary wagons. The treatment of cicatrised and clean wounds should be aseptic. The best bandage for cicatrised wounds is the collodion bandage. Iodoform preferably, as sterilised iodoform muslin, may be applied to inflamed and suppurating wounds." All the lint, wool, and muslin supplied to the hospitals seem to have been satisfactory. Collodion and spirit were both of great service. It appears that the hospital inventory requires to be augmented by such items as sterilisers for material and operating linen and for instruments, lamps or heaters for sterilisers, and enamelled basins for holding used bandaging material.

A subsequent issue of the *Chirurgia* contains a report by P. Ph. Koltchin on the cases treated in the 1st Barracks of the Ninth Kharbin Collecting Hospital, the statistics of which make an interesting comparison with those of the Fourteenth Kharbin Collecting Hospital with respect to the relative casualty-producing power of the various arms. Out of a total of 832 cases 634 (76·2 per cent.) were rifle-bullet wounds, 140 (16·8 per cent.) were shrapnel wounds, 45 (5·4 per cent.) were wounds from exploded shells, and 7 (0·8 per cent.) were from cold steel. The negligible balance was from contusions or from unknown causes. Again, 679 (81·6 per cent.) were through-and-through wounds and 153 (18·8 per cent.) were blind. As many as 633 (76·08 per cent.) healed without suppuration and 199 (23·9 per cent.) with suppuration. 12 patients (1·4 per cent.) died.

# NOTES UPON HEALTH RESORTS.

## BRIDGE OF ALLAN.

A CORRESPONDENT writes: The beneficial results obtained in the treatment of disease, especially in its more chronic phases, by residence at watering-places, health resorts, and the like, have been appreciated by the profession since the earliest dawn of medicine, and this form of treatment has received the approval of schools of therapeutics differing very widely in other respects. The result is that many places possessing special climatic advantages or yielding waters endowed with medicinal qualities have become known both to the profession and to the laity and are largely resorted to. Germany, Switzerland, and France are rich in such spots, and in our patronage of them we are apt to forget that there are admirable health resorts within the British Isles. Bath and Buxton, Cheltenham and Harrogate, Leamington and Woodhall in England, and Strathpeffer, Dunblane, Pitcaithly, and Bridge of Allan north of the border, all possess climatic and balneological advantages of a very high order and have the additional advantage of lying much nearer the patient's home than the continental spas. Notices of some of these places have appeared from time to time in the leading medical journals and on this occasion I would call attention to the advantages enjoyed by that beautiful little Stirlingshire town, Bridge of Allan.

Situated on the picturesque river of the same name and on the main Caledonian railway line from Glasgow to Perth and Aberdeen, it is readily accessible both from Edinburgh and Glasgow, as well as from the south. It lies under the shelter of a spur of the Ochils, which effectually protects it from the winds of the north and east, while the ground, sloping gently towards the south, widens out into the strath of the Forth and affords a splendid exposure for sunshine. The climate is mild and equable, and with its moderate rainfall possesses the freshness of the west of Scotland blended with that of the east. The slope of the ground permits of the ready drainage of moisture, and the air is singularly free from mist and fog. The real value of Bridge of Allan as a health resort lies, however, in its abundant supply of natural mineral waters. These have been known for many years but have only received detailed attention within recent years. Their source consists of six springs, tapped at a depth of 116 feet. These springs are not uniform in composition, four being very rich in saline constituents, the remaining two less so. The springs mix together at the bottom of the shaft from which they are pumped up, and it is this mixed water that is used. A recent analysis (April, 1907) of this water showed it to have the following composition:—

| | Grains per gallon. |
|---|---|
| Carbonate of calcium | 8·76 |
| Sulphate of calcium | 24·15 |
| Chloride of calcium | 266·94 |
| Chloride of magnesium | 7·16 |
| Bromide of magnesium | 4·81 |
| Chloride of sodium | 341·25 |
| Alumina, silica, &c. | traces |
| Organic matter | 0·18 |
| Iron | none |
| Total solid matter | 653·25 |
| Hardness (degrees) | 277·13 |
| Free ammonia | 0·004 |
| Albuminoid ammonia | 0·002 |
| Total ammonia | 0·006 |

An analysis for dissolved gases gave the following results:—

| | Cubic inches per gallon. |
|---|---|
| Oxygen | 1·92 |
| Carbonic acid gas | 2·46 |
| Sulphuretted hydrogen | none |

[Our correspondent at our request sent us a sample of the water and the results of the analysis made in THE LANCET Laboratory practically coincide with those given above. They were as follows:—

| | Grains per gallon. |
|---|---|
| Calcium carbonate | 4·50 |
| Calcium sulphate | 30·10 |
| Calcium chloride | 276·00 |
| Magnesium chloride | 10·00 |
| Sodium chloride | 329·00 |
| Bromine | Traces |
| Total saline constituents | 649·60 ] |

The water reaches the surface at a temperature of about 45° F. and is warmed to 133° F. before being drunk. It is therefore a non-gaseous, non-thermal spring, and a true natural mineral water, comparable to the best-known continental spas, some of which it closely resembles. For example, it is not unlike the Kissingen water which is also a cold spring of nearly the same strength (657 grains per gallon, Rakoczi spring). The latter, however, is gaseous

and is more aperient, due to the presence of Epsom salts. Bocklet, again, near Kissingen, yields a water at 50° F. of 440 grains per gallon, part of which is Glauber's salts; it also is gaseous. The water at Monsdorff is tepid and non-gaseous and somewhat stronger than the Stirlingshire spring, though it contains practically the same ingredients. That water, however, which bears the closest resemblance to it is the Eliza well at Kreuznach, a cold spring with no gas to speak of and of chemical composition very like that of the Bridge of Allan water except that it contains traces of iodine.

It will be seen from the above that this northern water is as worthy of regard as that from some of the most famous continental springs. Like them, it is a water to be taken at the spot and is suited for internal use and externally for bathing, spraying, and douching. Taken internally, the waters are of value in the treatment of subacute and chronic gout and rheumatism, their action being greatly enhanced by the simultaneous use of baths. They are further indicated in catarrhal affections of the stomach and bowels, and through their action as saline aperients they relieve portal congestion and improve hepatic action. The passive venous congestion of chronic cardiac disease is thus relieved and patients suffering from constipation and hæmorrhoids obtain relief. Neurasthenic cases also benefit by residing at Bridge of Allan and by the use of the waters for drinking combined with their external use. Their richness in calcium chloride has suggested that in them may be found a suitable means of prescribing this salt in cases of hæmophilia and of oozing from mucous surfaces or under the skin. Externally their great use is in chronic rheumatism where in the form of baths combined with massage they prove highly beneficial. In the same way they are employed in cases of neurasthenia and in convalescence after acute illnesses, such as influenza. Skin affections of the dry type are relieved by their use and they also find a place in the treatment of diseases peculiar to women in the form of hip baths and douches.

# Looking Back.

FROM

## THE LANCET, *SATURDAY*, Nov. 7th, 1829.

Now fever rarely spreads when brought into an hospital, and Dr. Elliotson[1] did not remember ever having seen an instance of it; but the fact that it is not *always* propagated by contagion, is no proof that it may not be so communicated; and if positive facts to the contrary are brought forwards, they are not, on this account, to be denied. It is asserted by some, that hydrophobia is not contagious; nay, some have denied the existence of the disease, and one individual does so at present, and declares he has inoculated himself with the saliva of a mad dog with impunity; but this is no argument, for few persons who are bitten become affected, and even a large number of dogs inoculated escape. So it is with small-pox, and even syphilis and gonorrhœa; many a diseased woman has infected one man, while another has visited her, even on the same day, without injury. In France, two students, who denied the contagious nature even of syphilis, went so far as to inoculate themselves with matter taken from a syphilitic person; one of these lost part of the axilla from the effects of the disease, and the other was so shocked at finding a bad ulcer form, that he put a period to his existence. Sufficient cases are on record of fever occurring from contagion, i.e., from the approach of persons labouring under the disease (or of individuals who had communicated with persons labouring under it) to others in health, and surrounded by healthy persons, to convince him of the frequent contagiousness of fever, though he himself never saw a well-marked case, and this he ascribes to the well-known fact, that the contagion of fever is easily dissipated by cleanliness and free ventilation, both which are carried to the utmost pitch in St. Thomas's, and which he takes care to have as fully attended to in private practice. Neither is he prepared to say, that fever can be produced by filth only, though certainly it is much more likely to spread when cleanliness is not attended to. It is common amongst the poor Irish, in London, who are generally thickly congregated together, and are extremely dirty in their habits; but then they are badly fed, and exposed to wet and cold, which are known continually to induce it. The following fact proves the power of filth to aggravate, if not to induce, fever, and looks very much like contagion. There is a court, near Bond-street, where a great number of poor Irish live, in which there was a large heap of filth behind the houses, and in one of them, the lower apartments being uninhabited, were filled by a large collection of filth of every kind, dead animals, excrement, and *all conceivable stinking things!* In this place fever occurred, and out of 16, who were attacked by it, ten were from the two houses next to each other, one of which contained the largest mass of filth; now there is no proof that these patients caught it from each other, but some of them were carried to an infirmary, in which there had been no fever previously for a length of time, and shortly afterwards two of the night nurses, who had been sitting up with, and attending on, these individuals, became ill; and in proof that the disease with which the nurses were affected, was the same as that of the former patients, it is remarkable that there was a peculiarity in its form, namely, that about the tenth day there was a relapse in every one of the Irish, and this peculiarity was observed in one of the nurses; the other died before the tenth day.

[1] Excerpt from Abstract of a Clinical Lecture on Fever by Dr. Elliotson at St. Thomas's Hospital, London.

## MEDICINE AND THE LAW.

*Right to Exclude Verminous Children from School.*

A QUESTION of considerable interest both to education authorities and the medical profession was raised in a case heard before the magistrates of the Stourbridge division on Oct. 25th at the instance of the Worcestershire education authority. The question was whether when a parent sends his child in such a condition that he or she brings into the school vermin the school authorities have the right to refuse admission and to treat the fact that the parent has not sent the child in a condition fit to be admitted as tantamount to a neglect to cause the child to attend. Several decided cases were referred to, not exactly covering the question in dispute but where the principle of law was analogous. In Saunders *v.* Richardson (7 Q.B.D. 388) it was held that a parent who, under an order by a court of summary jurisdiction that his child should attend a board school, caused the child to attend the school, but without the school fees, and without having applied to the guardians for payment of such fees or to the school board for a remission of them, was liable to be convicted under the Elementary Education Act, 1876 (now repealed) for non-compliance with the order. In Taylor *v.* Timson (20 Q.B.D. 671) it was held that there is no right on the part of a churchwarden forcibly to prevent an inhabitant of a parish or district from entering the church for the purpose of attending service, even though the churchwarden may be of opinion that he cannot be conveniently accommodated. The statute 5 & 6 Edw. VI., c. 1, s. 2, having imposed a general duty to go to church, which is still binding upon members of the Church of England, has conferred a correlative general right to go to church on those who are so obliged to go. In Pidgeon *v.* Legge (21 J.P. 743) the plaintiff, a chimney-sweep, went in his working dress into the bar of an ale-house where there were several persons taking refreshment. It was after working hours and the defendant, the landlord, recommended him to go and change his clothes and upon his refusal to leave after request the defendant desired two police constables to put him out. The plaintiff offered resistance to the policemen and when outside the door still struggled and was thrown down on the street and his leg was broken. It was held that if the plaintiff was in his clothes and person in an unfit condition to be in a public-house the defendant was justified in ordering the policemen to remove him and was not responsible for the excess of violence which they used in carrying out his command. In Tomlinson *v.* Ashworth (50 J.P. 164) it was held that the workman who is refused admission through failing to comply with the reasonable regulations of the works absents himself from his work. It was also contended that the Education Act, 1902, s. 17, requires the education authorities to "maintain and keep efficient all public elementary schools" and that unless they have power to refuse admission to children who are suffering from vermin they could not maintain and keep the

school efficient. Medical evidence was adduced before the magistrates showing the state of the child when admittance was refused and that the parent had been twice warned as to the state of the child and required to cleanse her before such admittance was so refused. Further, that the parent's neglect to cleanse the child had caused the child unnecessary suffering and injury to health, and so the parent had thus failed in the performance of the duty imposed by the Cruelty to Children Act, 1904. It was proved that the vermin would easily pass to other children and cause them discomfort, producing inattention to lessons and possibly their withdrawal from school until their parents could properly cleanse them. The medical officer also stated that the absence of the child from school was not due to an unavoidable cause as the vermin could easily have been removed in a few days if the parent had exercised proper care. It was proved that the child had been suffering from vermin for several months. The magistrates held that the managers were entitled to refuse admission to the child, having regard to her condition, and they fined the parent for neglecting to cause her to attend in such a condition that she would be so admitted.

*The Black Smoke Nuisance.*

All who have to do with the administration of the Public Health Acts in large towns are familiar with some of the problems which arise when the air is polluted by dense smoke from factory chimneys. By reasonably vigorous enforcement of their powers many sanitary authorities have succeeded in reducing the smoke nuisance very largely in their areas. Improved devices for securing complete combustion of the hydrocarbons and other volatile products of coal have been adopted in numerous factories. In cases where there have been emissions of smoke as the result of obvious carelessness convictions have been secured without difficulty. On the comparatively rare occasions when prosecutions of this nature have failed the courts have usually acted on the principle that costs should not be given against the sanitary authority, on the ground that its action has been inspired by regard for the interests of public health. All these things have tended to induce a feeling of confidence on the part of medical officers of health in regard to the administration of the Public Health Acts, and indeed the same considerations apply to the enforcement of the Sale of Food and Drugs Acts and other statutes. It is desirable in the interests of all concerned that such confidence should not result in want of care in the institution or conduct of proceedings. The immediate reason for these remarks is to be found in the history of the prosecution by the Chelsea borough council—acting as the local sanitary authority—of the Underground Electric Railways Company (of London), Limited, for emitting "black smoke in such quantity as to be a nuisance"[1] from the chimneys of their Lot's-road generating station. The evidence for the borough council showed that residents in the district had from time to time made complaints as to the nuisance caused by black smoke from the generating station and that on certain days during the past summer specially detailed observers had noted the issue of smoke, which seemed to them to be black, at specified times. These observations were made on the instructions of the medical officer of health and as a result a number of summonses were issued. The advisers of the council probably regarded the matter as an ordinary public health prosecution which would involve an expenditure of £15 or at the most £20. The case duly came before Mr. Curtis Bennett at Westminster police court. During a hearing which lasted in all seven days—spread over a period of almost as many months—the defendants produced unimpeachable evidence from engineers and other men of science showing that the smoke emitted from their chimneys was not "black" as the word is understood by experts in this connexion, and that the whole construction of, and method of using, the generating station were as perfect as human ingenuity could devise. It was further represented to the magistrate, truly enough, that the conversion of the underground railways from steam traction to electric traction has conferred inestimable benefits on the inhabitants of London, especially as regards the freedom of the atmosphere from fumes and smoke. The stipendiary magistrate adopted this view very strongly and in dismissing the summonses, Mr. Curtis Bennett took the very unusual course of awarding the defendants 300 guineas costs against the sanitary authority. The moral is that local authorities and their advisers should be just as careful to see that they have a good case when administering the Public Health Acts as any private litigant is in protecting his own interests. It is difficult enough to enlist public opinion on the side of health authorities in the ordinary course. It will be doubly difficult if examples of unsuccessful prosecutions are brought prominently before the public by way of the police courts and the newspapers.

[1] Public Health (London) Act, 1891, Sec. 24 *b*.

## ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A COMITIA was held on Oct. 31st, Sir RICHARD DOUGLAS POWELL, Bart., K.C.V.O., the President, being in the chair.

The following gentlemen having passed the required examination were admitted Members of the College: Maurice Alan Cassidy, M.A., M.B. Cantab., L.R.C.P. Lond.; Charles Wilberforce Daniels, M.B. Cantab.; Samuel Ernest Dore, M.D. Cantab., L.R.C.P. Lond.; John Prescott Hedley, M.A., M.B. Cantab., L.R.C.P. Lond.; Reginald Charles Jewesbury, M.A., M.B. Oxon., L.R.C.P. Lond.; Herbert William George Macleod, M.D. Edin.; George Basil Price, M.D. Lond., L.R.C.P. Lond.; Robert Frazer Standage, L.R.C.P. Lond.; and Harold Waterlow Wiltshire, M.A., M.B. Cantab., L.R.C.P. Lond.

Licences were granted to 91 gentlemen who had passed the necessary examination.

The following communications were received:—1. From the secretary of the Royal College of Surgeons of England reporting the proceedings of its Council on July 25th and Oct. 10th. 2. From the Secretary of State for India, forwarding copies of reports by the Indian Government on the suggestions of the College with regard to plague measures in India made to Mr. Brodrick in 1905, and of a despatch by Mr. Morley to the Government of India of July 26th, 1907, on the same subject. The matter was referred to the standing committee on plague. 3. From the chairman of the Home Office committee on the London ambulance service inviting the College to appoint a representative to give evidence before the committee. Sir William S. Church was nominated by the PRESIDENT to represent the College.

The audited accounts for the year ending Sept. 29th last were laid before the College and adopted.

The quarterly report of the finance committee, dated Oct. 17th, was received and adopted.

The REGISTRAR (Dr. E. LIVEING) moved that the following by-law be enacted for the second time—viz.,

That Daniel Colquhoun, M.D. Lond., and George Edward Rennie, M.D. Lond., elected Fellows on April 25th, residing in New Zealand and Australia respectively, be admitted *in absentiâ*, any by-law to the contrary notwithstanding.

The proposal was adopted.

The REGISTRAR moved for the second time that alterations should be made in certain by-laws relating to Licentiates to make them conformable to the revised regulations of the Conjoint Board adopted on April 25th last. The proposal was adopted.

A report was received and adopted from Sir William Church and Dr. G. A. Heron who represented the College at the International Congress on School Hygiene in August last.

A report was received and adopted from Dr. Michael Grabham who represented the College at the Centenary Commemoration of the Geological Society in September last.

Dr. WILLIAM EWART proposed the following motion:—

That the question be considered of the expediency of securing some permanent reproduction by photography or otherwise of the most valuable among the ancient deeds, documents, and art treasures, the property of the College, with a view to their perpetuation in the copy in the event of loss or destruction of the originals.

The matter was referred to the library committee.

Dr. F. W. Andrewes was elected a member of the executive committee of the Imperial Cancer Research Fund in place of the late Sir William Broadbent.

A report was received and adopted from the committee of management dated Oct. 7th, 1907. The committee recommended that Mr. Edmund Owen should be appointed visitor to the examinations of the Egyptian School of Medicine for the examinations to be held in December next.

Griggleswick School, Settle, Yorkshire, was added to the list of institutions recognised by the Examining Board in

England for instruction in chemistry and physics. Wyggeston School, Leicester, was also recognised for instruction in biology.

Dr. Frederick Taylor was re-elected a member of the committee of management.

After some further formal business had been transacted the PRESIDENT dissolved the Comitia.

# VITAL STATISTICS.

## HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8128 births and 4810 deaths were registered during the week ending Nov. 2nd. The annual rate of mortality in these towns, which had been equal to 15·7 and 14·6 per 1000 in the two preceding weeks, rose again to 15·7 per 1000 in the week under notice. During the first five weeks of the current quarter the death-rate has averaged 15·3 per 1000, the rate during the same period being 14·1 in London. The lowest death-rates in the 76 towns last week were 8·0 in East Ham, 8·7 in Hornsey, 9·0 in West Hartlepool, 9·2 in Norwich, and 9·5 in Croydon; the highest rates were 21·7 in Walsall, 23 6 in Middlesbrough, 23·8 in Liverpool, 26·0 in Merthyr Tydfil, and 26 6 in Stockton-on-Tees. The 4810 deaths in the 76 towns last week were 312 in excess of the number in the previous week, and included 499 which were referred to the principal epidemic diseases, against numbers declining from 892 to 563 in the four preceding weeks; of these, 212 resulted from diarrhœa, 85 from measles, 61 from diphtheria, 61 from whooping-cough, 48 from scarlet fever, and 32 from "fever" (principally enteric), but not any from small-pox. No deaths from any of these epidemic diseases were registered last week in Hastings, Handsworth (Staffs), Kings Norton, Wallasey, Barrow-in-Furness, Huddersfield, Halifax, or Rotherham; among the other towns the death-rate from these diseases ranged upwards to 3·6 in Cardiff, 3·8 in Tynemouth, 3·9 in Burton-on-Trent, 4·5 in West Bromwich and in Warrington, 5·0 in Burnley, and 6·2 in Merthyr Tydfil. The fatal cases of diarrhœa, which had decreased from 660 to 301 in the four preceding weeks, further fell to 212 in the week under notice; the highest death-rates from this disease last week were 2 0 in Middlesbrough, 2·1 in Walthamstow, 2·5 in Burnley, 2·7 in Merthyr Tydfil, 3·7 in Warrington, and 4·7 in Hanley. The deaths from measles, which had risen from 35 to 71 in the four previous weeks, further increased last week to 85 and caused death-rates ranging upwards to 1·2 in York, 1·3 in Reading, 1·4 in Ipswich, 1·9 in Tynemouth, 2·5 in Cardiff, 2·7 in Merthyr Tydfil, and 2·9 in Burton-on-Trent. The fatal cases of diphtheria, which had been 47 and 52 in the two preceding weeks, further rose to 61 in the week under notice; this disease was proportionally most fatal in Reading, where the rate was 1·3 per 1000. The 61 deaths from whooping-cough just exceeded the number in the preceding week and caused death-rates ranging upwards to 1·1 in Newcastle-on-Tyne and 1·9 in Tynemouth. The fatal cases of scarlet fever, which had been 48, 54, and 50 in the three preceding weeks, further declined to 48 last week, the highest death-rates from this disease being 1·1 in Walsall, 1·2 in Walthamstow, and 1·5 in West Bromwich. The deaths referred to "fever," which had been 16, 22, 27, and 29 in the four preceding weeks, further rose to 32 in the week under notice; the greatest proportional mortality from this cause was 1·2 per 1000 in Gateshead. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had risen from 2658 to 5197 in the 25 preceding weeks, had further increased to 5467 at the end of last week; 832 new cases were admitted during the week, against 752, 820, and 793 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory system, which had been 175, 167, and 166 in the three preceding weeks, rose again to 245 in the week under notice, but were 41 below the corrected average number in the corresponding periods of the five years, 1902–06. The causes of 47, or 1·0 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, and in 46 other towns; 12 uncertified deaths were registered in Liverpool, eight in Birmingham, three in Warrington, and two each in Manchester, Hull, and Birkenhead.

## HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 13·8, 14·0, and 14·4 per 1000 in the three preceding weeks, further rose to 16·4 per 1000 in the week ending Nov. 2nd, and was 0·7 per 1000 above the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 13·5 in Perth and 14·6 in Aberdeen to 19·0 in Greenock and 20·8 in Dundee. The 570 deaths in these eight towns last week were 71 in excess of the number in the previous week, and included 75 which were referred to the principal epidemic diseases, against 81, 61, and 59 in the three preceding weeks. These 75 deaths were equal to an annual rate of 2·2 per 1000, which was 0·6 above the mean rate last week from the principal epidemic diseases in the 76 large English towns; they included 32 which were referred to measles, 17 to diarrhœa, 11 to whooping-cough, nine to diphtheria, and six to "fever," but not any to small-pox or to scarlet fever. The deaths from measles, which had been eight and 16 in the two previous weeks, further rose to 32 in the week under notice, and included 16 in Dundee, 12 in Glasgow, and four in Greenock. The fatal cases of diarrhœa, which had been 37, 26, and 20 in the three preceding weeks, further declined last week to 17, of which nine were registered in Glasgow, three in Dundee, and three in Paisley. The deaths from whooping-cough, which had been six and 14 in the two previous weeks, decreased to 11 in the week under notice, and included five in Glasgow, two in Edinburgh, and two in Leith. The fatal cases of diphtheria, which had been seven, eight, and two in the three preceding weeks, rose last week to nine, of which five were registered in Paisley and three in Glasgow. The deaths referred to "fever," which had been 11, ten, and five in the three preceding weeks, were six last week, and included two in Glasgow, two in Edinburgh, one in Leith, and one in Greenock; all these cases, except the two in Glasgow, were attributed to cerebro-spinal meningitis. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 51, 71, and 88 in the three preceding weeks, further rose to 90 in the week under notice, but were four below the number in the corresponding week of last year. The causes of 19, or 3·3 per cent., of the deaths in these towns last week were not certified or not stated; in the 76 English towns the proportion of uncertified deaths did not exceed 1·0 per cent.

## HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 20·3 and 19·1 per 1000 in the two previous weeks, rose again to 21·1 per 1000 in the week ending Nov. 2nd. During the first five weeks of the current quarter the death-rate has averaged 20·3 per 1000, the rate in London during the same period being 14·1 and in Edinburgh 13·3. The 158 deaths of Dublin residents registered during the week under notice were 15 in excess of the number in the preceding week, and included ten which were referred to the principal epidemic diseases, against 30, 19, and 15 in the three preceding weeks; of these, six resulted from diarrhœa, two from "fever," one from measles, and one from scarlet fever, but not any from small-pox, diphtheria, or from whooping-cough. These ten deaths were equal to an annual rate of 1·3 per 1000, the death-rate last week from the principal epidemic diseases being 1·4 in London and 0·8 in Edinburgh. The fatal cases of diarrhœa, which had been 23, 15, and eight in the three preceding weeks, further declined to six in the week under notice. The 158 deaths from all causes included 34 among children under one year of age and 41 among persons aged upwards of 60 years; the deaths of infants were five fewer than the number in the previous week, while those of elderly persons showed a slight excess. Three inquest cases and two deaths from violence were registered; and 74, or 46·8 per cent., of the deaths occurred in public institutions. The causes of four, or 2·5 per cent., of the deaths in Dublin last week were not certified; in London all the causes of deaths were duly certified, while in Edinburgh the proportion of uncertified deaths was 3·9 per cent.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet-Surgeon George Sprey Smith has been placed on the Retired List at his own request, with permission to assume the rank of Deputy Inspector-General of Hospitals and Fleets.

In accordance with the provisions of His Majesty's Order in Council of May 13th, 1901, Surgeon Francis Hernaman-Johnson has been transferred to the Emergency List (dated Sept. 28th, 1907).

The following appointments are notified:—Fleet Surgeon: A. L. Christie to the *Hawke* on recommissioning. Staff-Surgeons: A. E. Kelsey to the *President*, additional, for three months' course at West London Hospital; E. O. B. Carbery to the *Sappho* on recommissioning; and S. H. Birt to the *President*, additional, for three months' course at London Hospital. Surgeons: G. D. Bateman to the *Ganges*, for Shotley Barracks; C. K. Bushe to the *Cæsar*; W. J. Still to the *Vivid*; and W. N. Blatchford and R. Thompson to the *Vivid*.

### ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel John D. T. Reckitt retires on retired pay (dated Nov. 2nd, 1907). Major John S. Edye retires on retired pay (dated Nov. 2nd, 1907).

Lieutenant-Colonel James S. Green, from temporary half-pay, to be Lieutenant-Colonel (dated Oct. 22nd, 1907).

Major H. S. Peeke has been granted six months' leave out of India on medical certificate. Captain F. A. Stephens has assumed medical charge of staff and departments, Scottish Command. Lieutenant J. A. B. Sim has assumed charge of the Military Hospital, Berwick-on-Tweed.

### INDIAN MEDICAL SERVICE.

The following officers are posted to the medical charge of regiments: Captain W. L. Trafford to 2nd Lancers at Fyzabad, Captain J. O'Leary to 8th Cavalry at Umballa, Captain G. A. Jolly to 4th Rajputs at Meerut, Captain B. B. Paymaster to 9th Bhopal Infantry at Allahabad, Captain J. McPherson to 14th Sikhs at Ferozepore, Captain D. T. Pridham to 18th Infantry at Benares, Captain H. M. Brown to 76th Punjabis at Secunderabad, and Captain E. C. C. Maunsel to 84th Punjabis at Mooltan.

### VOLUNTEER CORPS.

*Royal Engineers (Volunteers):* The Tay Division (Submarine Miners): The undermentioned officer resigns his commission, with permission to retain his rank and to wear the prescribed uniform, Surgeon-Major G. O. C. Mackness (dated Nov. 2nd, 1907).

### ROYAL ARMY MEDICAL CORPS IN INDIA.

The following revised rates of pay of the senior corps officers of the Royal Army Medical Corps serving in India have been sanctioned by the Secretary of State for India:—1. Majors after 20 years' total service, if promoted to that rank before the date of the new Royal Warrant and if considered qualified to draw the same rate of pay as lieutenant-colonels—viz., Rs.1150 per mensem, Rs.900 if in receipt of staff salary. 2. Lieutenant-Colonels promoted to that rank on and after the date of the new Royal Warrant, after three years' service as such, to draw the same rate of pay as lieutenant-colonels specially selected for increased pay—viz., Rs.1250 per mensem, or Rs. 1000 if in receipt of staff salary.

## Correspondence.

"Audi alteram partem."

## THE REPRESENTATION OF THE MEDICAL FACULTY ON THE SENATE OF THE UNIVERSITY OF LONDON.

*To the Editors of* THE LANCET.

SIRS,—Three senatorial election addresses—of Professor E. H. Starling, of Mr. F. C. Wallis, and of Dr. Norman Moore—i.e., of a physiologist, of a surgeon, and of a physician—are now in the hands of members of the Faculty of Medicine. The physiologist promises to support (1) a more accessible degree; (2) increased time for clinical subjects; and (3) concentration of preliminary and early medical studies in a small compact school at South Kensington. There is no allusion in his address to an institute of medical science nor to the scientific requirements of the medical schools. The surgeon (1) appeals to the Faculty to reaffirm its previous decisions against the establishment of a third centre for preliminary (and intermediate) medical education at South Kensington; (2) directly contradicts the statement that money has been collected for this specific purpose alone or that agreements have been made by the University with certain medical schools to establish such a centre; and (3) proposes to establish and to endow an institute for higher teaching and research in close touch with the teachers and the courses of instruction at the various schools. The physician is of opinion that the foundation at South Kensington of an institute for research in physiology, pharmacology, and those parts of biology related to pathology, is in the highest degree desirable, but that it is undesirable to erect a centre for the teaching of the preliminary and intermediate parts of the curriculum. That is to say, that the foundation of an institute of physiology and allied sciences at South Kensington is recognised by the surgeon and by the physician to be desirable in the interests of medical science in London, whereas it is not mentioned by the physiologist. The state of matters at the University is as follows: "Concentration," as advised five years ago by the Faculty of Medicine, and adopted by the Senate, was contingent upon the collection of upwards of £300,000 (the actual sum named in the authorised scheme amounted to £375,000) and is recognised to be impracticable, inasmuch as the total sum subscribed amounts, it is said, to only £70,000.

That first scheme as a whole is impracticable, and it does not matter at all whether any candidate pledges himself either for or against it. But the best portion of the scheme—provision for research—remains eminently practicable and is recognised to be in the highest degree desirable by the great majority of teachers in London, inclusive of many distinguished teachers whose names are on the list of Professor Starling's supporters.

The question whether or no an institute of medical science (in the sense of a school of preliminary and intermediate medical studies) shall be established at South Kensington is settled by the financial position. The question before the University has become whether or no an institute of medical science (in the sense of an institute for higher teaching and research) shall be founded at South Kensington. Of the three senatorial candidates now before the faculty two—namely, Mr. Wallis and Dr. Moore—have expressed themselves in its favour, and at the recent senatorial election the elected candidates, Dr. H. A. Caley and Mr. Leonard Hill, declared in their joint address that "the promotion of higher learning and research is more essential to the prestige of the University of London than provision for, and the regulation of, routine teaching, and we are therefore in favour of developing within the University advanced lectures, courses of study, and laboratory facilities for research work in the several branches of physiology, pharmacology, and allied subjects on lines similar to those at present existing in connexion with the Physiological Laboratory of the University." Professor Starling has not yet expressed any opinion.

I am, Sirs, yours faithfully,

A. D. WALLER.

Physiological Laboratory, University of London,
South Kensington, Nov. 4th, 1907.

*To the Editors of* THE LANCET.

SIRS,—In Mr. F. C. Wallis's election address the suggestion is made that an institute for research in the medical sciences should be erected and that the £70,000 which has been subscribed and the site which has been offered should be allocated to its establishment and endowment. Dr. Norman Moore expresses his approval of such an institute but does not say from what funds it should be provided.

The money referred to was subscribed and the site offered for an institute of medical sciences in which medical students were to be taught. To attempt to divorce teaching and research is at the best a very doubtful policy, for the bulk of research in the medical sciences, both in this country and abroad, has been done by teachers in the laboratories attached to their schools. But a policy which proposes to use this money to build an institute at which only research and "higher teaching" are to be carried on is more than doubtful; it is an attempt to pervert funds from the object for which they were subscribed, an attempt which if

successful is likely to prevent the public from opening its purse to the London University in the future.

There is a definite demand from certain schools of the University for a small centre at South Kensington, and the £70,000 subscribed for this purpose is more than sufficient to build and equip it. Such a centre would not interfere in the least with the autonomy of the Charing Cross Hospital Medical School, as Mr. Wallis seems to fear, or with any other school which wishes to teach its own students in the preliminary and intermediate subjects. It would, of course, also be a centre where research and higher teaching would take their natural place as at other universities.

In these circumstances, Sirs, I trust that the Faculty will not lend its support to any such proposals as those of Mr. Wallis, which can only be regarded as likely to hamper the development of certain schools of the University. In regard to the urgent need for the rearrangement of the curriculum and the allocation of more time for clinical studies Professor E. H. Starling is no new convert. He has already put the case so strongly in his address and in previous utterances that the Faculty may elect him with confidence to represent its known views on these points.

I am, Sirs, yours faithfully,

London, W., Nov. 6th, 1907. H. G. TURNEY.

*To the Editors of* THE LANCET.

SIRS,—Mr. F. C. Wallis in his election address to the members of the Faculty writes: "There is a further impression that agreements have been made with certain medical schools to establish such a third centre at South Kensington. This impression is without foundation. In fact, no assurances, either written or oral, have been given and the University has incurred neither legal nor moral obligations in this respect."

Mr. Wallis has been misinformed. The above statement is incorrect. In 1905 the University authorities opened negotiations with regard to the transference of the preliminary and intermediate portions of the curriculum from St. George's Medical School to the University. The question was carefully considered by the medical school council and the governors of the hospital. The undersigned were deputed by the hospital authorities to discuss the questions at issue with the delegates of the University. We were instructed to take no steps unless we were assured that a third centre was to be erected in the immediate future in the near neighbourhood of the University. The University delegates, amongst whom was the Principal, assured us that the erection of a third centre was the settled policy of the University and that this policy had been recommended *nemine contradicente* by the Medical Faculty.

On this assurance negotiations were continued. Subsequently it was arranged that:—1. Our students in the preliminary and intermediate studies should be transferred, together with our teachers in these subjects, to University College and King's College. 2. As soon as the third centre was established our students should be transferred to it. 3. St. George's Hospital should guarantee the payment of £500 per annum to the University for a term of years.

We asked that our teachers should also be transferred to the new centre as soon as it was built, but the University delegates were unable to concede this point. When the hospital authorities learnt that an attempt was being made to persuade the University to repudiate its obligations, the treasurer addressed a letter to the Vice-Chancellor. In this letter a clear account of the negotiations and of the University's undertaking is given. The letter was sent and acknowledged nearly six months ago, and we would call the attention of the members of the Faculty to the fact that we have received no denial nor repudiation of its contents from the Vice-Chancellor. This letter was subsequently published in the medical press,[1] and we are at a loss to understand how it has escaped Mr. Wallis's observation.

The undersigned carried on all the negotiations, and we pledge our word that St. George's Hospital would never have given up the teaching of preliminary and intermediate studies, if we had not been assured by the delegates of the University that the erection of a third centre in the immediate neighbourhood of the Imperial Institute was the settled policy of the University. The University delegates were thoroughly aware that this point was the fundamental one in the negotiations. We would, therefore, appeal to the members of the Medical Faculty not to give their votes in the forthcoming election in support of any candidate who urges the University to repudiate its obligations.

We are, Sirs, yours faithfully,

A. WILLIAM WEST,
Treasurer of the Hospital.
ARTHUR LATHAM,
Formerly Dean of the Medical School.
FRANCIS JAFFREY,
Formerly Dean of the Medical School.
G. A. BUCKMASTER,
Formerly Lecturer on Physiology in the Medical School.

St. George's Hospital, S.W., Nov. 4th, 1907.

[1] See THE LANCET, July 6th, 1907, p. 49.

*To the Editors of* THE LANCET.

SIRS,—I have received a letter from one of the members of the staff of the London School of Medicine for Women containing a statement to which I think wider publicity should be given than it has at present obtained. The letter runs as follows:—

DEAR STARLING,—I have had handed to me a letter written by one of the teachers of the L.S.M.W. in which is the following quotation from a letter written by a member of the Senate: "It is suicidal policy for your colleagues to vote for concentration. The whole movement is being engineered from Univ. Coll., and it is Univ. Coll. which has succeeded in blocking the incorporation of your school. They want to cater for women themselves now their Prelim. Sci. and Inter. Sci. are under separate management, and of course they naturally do not want your handicap removed. The L.S.M.W. incorporation committee of the Senate is still in existence, but, for the above reasons, it has not met for more than 18 months. If Starling is returned I do not suppose it will ever meet again; you will be told that the third institute will meet your requirements."

I do not know the name of the author of this letter "written by a member of the Senate" but since it was written with a view to influencing the votes of all the teachers of the School of Medicine for Women at the approaching senatorial election it cannot be regarded as a private document. The whole statement from beginning to end is a deliberate invention.

Incorporation of academic institutions in the University is, and has been for the last eight years, the policy of University College. My colleagues and our representatives on the Senate earnestly desire to see the incorporation of the School of Medicine for Women carried out as one step in this policy and have taken no part in blocking the incorporation. My colleagues have no desire to attract women students from the London School of Medicine for Women. Women are not admitted to the anatomy course at University College, so that it is not possible for women medical students to obtain a complete course at the College. I myself am extremely interested in the incorporation of the Women's School of Medicine and look forward to this school, after incorporation, being the University centre for women medical students. If I am returned I shall make it one of my first duties to inquire into the reason for the discreditable delay which has occurred in the carrying out of the negotiations with the school.

I challenge the writer of the above letter to acknowledge in public the authorship of the statements which he has circulated in private, and to state what grounds or authority he has for making these statements. It would be interesting to know if he has employed his ingenuity in writing similar letters, with modifications suitable to local requirements, to members of other medical schools. It is surely deplorable that such underhand methods should find their place among tactics employed in an election of the University of London. I am sending a copy of this letter to every member of the Senate of London University.

I am, Sirs, yours faithfully,

ERNEST H. STARLING.

University College, Gower-street, London, W.C., Nov. 4th, 1907.

## AN IMPROVED CURETTE FOR ADENOID GROWTHS.

*To the Editors of* THE LANCET.

SIRS,—In your issue of Nov. 2nd Mr. William Lloyd describes a curved form of Delstanche's post-nasal curette. May I point out that I have been using a curette with this curve for some years. I found it ready made in Messrs. Down's shop, and it is figured in their catalogues. I think, however, that the curve of the curette is improved on in Dr. Barr's model in which the curve is greater still and the cutting end set at a more acute angle.

I am, Sirs, yours faithfully,

Westerham, Nov. 6th, 1907. A. MAUDE.

## THE TERM "MALTA FEVER."

*To the Editors of* THE LANCET.

SIRS,—I have recently received a letter from Professor Trambusti of Messina, of which the accompanying is a translation. I should esteem it a favour if you would give Professor Trambusti the publicity he desires, a publicity which is the more desirable in order to avoid any possible misunderstanding on the part of English readers who will find that an increasing number of Italian observers are adopting the nomenclature suggested by Trambusti.

I am, Sirs, yours faithfully,

Guy's Hospital, S.E., Nov. 6th, 1907. JNO. EYRE.

[TRANSLATION.]

Oct. 24th, 1907.

HONOURED COLLEAGUE,—At the Medical Academy of Palermo, and afterwards at Milan, in a lecture I delivered in May on Malta fever, I proposed that henceforward, in order to do away with an unappropriate denomination, this infection should be called septicæmia of Bruce (setticemia del Bruce).

I hope that this nomenclature, which I proposed and have used throughout a publication to be issued shortly, will meet with your approval and that of the medical profession in England and that you will discard with pleasure a name which is an unjust slight on the Island of Malta and the Mediterranean coast, and gladly see on record the name of an illustrious colleague to whom we are indebted for the discovery of the specific agent of the said infection.

I authorise you to make public this request of mine in such English journals as you may think advisable.

Yours faithfully,

ARNALDO TRAMBUSTI,

Professor of General Pathology at the University of Palermo.

To J. W. H. Eyre, M.D., Bacteriological Laboratories, Guy's Hospital, London.

## THE NEEDS OF LONDON MEDICAL STUDENTS.

*To the Editors of* THE LANCET.

SIRS,—Sir William Gowers's scheme for conferring on Conjoint diploma holders an M.D. of the London University, as set out in his letter under this heading in THE LANCET last week, is ingenious, but it is, I think, open to some very serious objections. In the first place, if the road to the M.D. *viâ* the Royal Colleges were easier, few if any would be at the trouble to approach by way of the University itself. This result would hardly make for the higher efficiency of medical study which Sir William Gowers, as much as anyone, must desire. In the second place, if the Senate has power to grant a degree as suggested, would it be possible to induce them to do so? Not only would almost all those representing the Faculty of Medicine object to the scheme but there are the senators representing other faculties to be reckoned with. If the London degree in medicine be conferred on the diplomates of the Royal Colleges of Physicians and Surgeons, surely diplomates in theology, law, science, and music from various institutions in London might have an excellent claim to degrees in their respective subjects.

Though there is little probability that Sir William Gowers will get the scheme considered by the University of London, possibly the University of Edinburgh might consider it. The Licentiates of the Royal Colleges there suffer under exactly the same disabilities in not possessing the M.D. as do the holders of the Conjoint diploma in London. If the precedent were established in Edinburgh the authorities of the London University no doubt would be reasonable enough to consider the scheme. If the degree be conferred as suggested on holders of the Conjoint certificate the Licentiates of the Apothecaries' Hall would certainly suffer a grievance, and Sir William Gowers, probably through inadvertence, does not allude to them in his letter.

I am, Sirs, yours faithfully,

Croydon, Nov. 4th, 1907. A. PERCY ALLAN.

"THE NEW DISEASE."—The following paragraph was printed in the *Times of India* of Oct. 19th: "The new disease, sudden drowsiness, which recently manifested itself in Calcutta, appears to have reached Cawnpore, one authentic case having occurred in a native family, four in number, all of whom were carried off in a short time from this malady. The first indication of the disease is not unlike, it is said, plague symptoms, high fever accompanied by large spots on the body, prostrating the patients, who refuse all nourishment and sink rapidly till death relieves them of their agony. It is said the new disease is extremely painful."

## RECENT OUTBREAKS OF PLAGUE IN THE NEAR EAST.

(FROM THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.)

THE outbreak of plague in Jeddah, some details of which were furnished in my letters published in THE LANCET of Feb. 16th (p. 465) and May 4th (p. 1253) last, seems to have died out completely at the end of May. The weekly returns in continuation of those published in the letters just referred to were as follows: April 22nd to 28th, 10 cases, 9 deaths; April 29th to May 5th, 12 cases, 12 deaths; May 6th to 12th, 13 cases, 12 deaths; then on May 19th one death was recorded, on the 20th two, and on the 30th a single fatal case. Between May 11th and 30th no fresh case had been reported, and after the last-named date no new patients came to the knowledge of the sanitary authorities there. On May 28th the five days' quarantine that had been imposed on arrivals from the Hedjaz coast was reduced to three, and on June 18th all measures against that coast were reduced to a simple "medical visit" in the first Turkish port possessing a health officer. At a later date that measure was also suppressed. The total number of plague cases officially registered in Jeddah between Jan. 8th—when the recrudescence of the disease began there—and May 30th was 365 and that of deaths 354. It is more than probable that the true number of cases, and possibly of deaths also, greatly exceeded these figures.

The measures taken in Jeddah to combat the outbreak consisted mainly in the evacuation and disinfection of infected houses, but even these simple precautions could not be carried out very thoroughly owing to the opposition of the people. A reward of 20 paras (equal to 1*d.*) was offered by means of the public crier for every rat, living or dead, brought to the health office; but some Shafii preachers announced that it would be a grave sin to take advantage of this offer, as the rats would be either vivisected or burnt, and the result was that not a single rat was brought in, although the Kaiamkam (or governor) had himself set the example of bringing a living rat to the health authorities.

An outbreak of plague of some severity prevailed in the early part of the summer at Bahrein, in the Persian Gulf. This group of islands, which is the centre of the pearl-fishing industry of the Gulf, has been the scene of more than one such outbreak in the last few years. The reappearance of the disease there was first announced at the end of April; between April 21st and 27th seven cases and four deaths were observed. Arrivals from these islands are always subject to 48 hours' observation and disinfection in Turkish ports, and the only measure added on this occasion was that of rat destruction; in Persian ports the prescriptions of the Paris Convention (1903) were complied with, five days' observation, including the days of the voyage, being applied to arrivals from Bahrein. The outbreak rapidly spread there; in the week ending May 17th the number of deaths rose to 200; then in successive weeks ending on the dates named the numbers of deaths were as follows: May 24th, 500; May 31st, 500; June 7th, 250; June 14th, 100; June 21st, 60; June 28th, 60; July 5th, 20; and July 12th, no new cases. On July 18th Bahrein was declared free of plague and the quarantine against it in Persian ports was suppressed. It will be seen that the returns from Bahrein were in almost every instance merely round figures; more exact returns were probably impossible to obtain. An unknown number of cases occurred among the pearl fishers which were not included in the weekly totals just quoted; only once were figures mentioned—this was in a report dated June 19th when it was stated that 15 pearl fishers had died from plague. Fortunately there was no serious spread of the disease from Bahrein; on the Persian shores of the Gulf the lazarets under British medical officers appear to have kept the infection from entering Persia. At the Bushire lazaret as many as 16 imported cases, seven of which proved fatal, were dealt with before June 16th; and at the Lingah lazaret there were three such cases, all fatal. At the end of May it was rumoured that some deaths from suspected plague, in arrivals from Bahrein, had occurred at Deyir Dashti, in the interior of Persia, but the rumour was not confirmed.

A rather more serious occurrence in connexion with this outbreak was the following. On May 23rd an English steamer, the *Moshtari*, arrived at Jeddah, in the Red Sea,

from Basra and reported that on its voyage between Basra and Bahrein no less than eight cases of plague had occurred among members of the crew, that three of them had died, and the other five had been landed at Aden. It will be observed that the crew were attacked before reaching Bahrein and the medical officer on board attributed the outbreak to contamination at that group of islands on the previous voyage. On that voyage the ship had gone from Jeddah to Basra, touching at Bahrein, where, however, it had not taken in any cargo. On arriving at Basra on April 12th it had been subjected to rat destruction by burning sulphur and 14 dead rats were found after the operation was completed. No further light was thrown on the origin of the outbreak on this steamer, but its occurrence at once led to a searching inquiry as to the presence of plague in Basra itself, and it was found that not only had there been a persistent rumour of its presence there for the preceding three weeks but one certain case of the disease was discovered, the patient being a sweetmeat seller in the Basra bazaar. Other cases and deaths were believed to have occurred but nothing definite was ascertained, and by the middle of June it was stated that the health of Basra was good and the mortality there below the normal for that period.

In the Mediterranean more than one small outbreak of plague has occurred in the present year. At Smyrna there was a single case of the disease early in January; it was only seen after death. The patient was a Turkish boy who was taken ill on Jan. 6th and died on the 10th. The diagnosis of plague was confirmed bacteriologically. The source of the infection was entirely unknown; the boy's father was captain of a sailing ship but he had never made a voyage to Egypt, and, moreover, the ship had been hauled up on land for the preceding six months. A similar incident occurred near Beirût in August. On the 2nd of that month a groom in the employment of a medical practitioner in Beirût fell ill with symptoms of plague, apparently in the town of Beirût; he made his way thence to a place called Dekuaneh, in the Lebanon, half an hour east of Beirût, where he died on the 8th. A bacteriological examination was made after death and the diagnosis of plague was confirmed. In this case also the source of the infection could not be traced; the man had never been to Egypt, nor, so far as could be ascertained, had he had any relations with persons coming from Egypt.

A small foyer of plague has recently formed in the island of Mitylene. The first case there was that of a street-sweeper who was seen at the Greek hospital on Sept. 3rd and had then been ill for five days. Plague bacilli were found in the bubo; the patient recovered. As at Smyrna and Beirût, the origin of the infection could not be traced. On inquiry, however, it was found that two other highly suspicious cases had developed in the bazar of Mitylene. The patients, boys aged 12 and 17 years respectively, had a few days before discovered a dead rat in the ceiling of their father's shop (a confectioner's) and removed it. Their symptoms pointed to the disease being plague, but when seen the buboes had gone on to suppuration and plague bacilli could not be isolated from them. Both cases recovered. No other cases were seen until Oct. 3rd, when a grocer's boy, aged 15 years, fell ill with symptoms of plague; he was admitted to hospital on the 4th; microscopically the bubo was found to contain bacilli resembling those of plague. On the 6th, another boy, aged 13 years, from the same shop developed similar symptoms; and on the 7th a baker's assistant, aged 18 years, was seen who had been ill for 15 days and had then a bubo in one groin. Neither of the latter cases was examined bacteriologically; all are now recovering, though the first of the three was dangerously ill for a while. Finally, on the 12th a case of plague was observed at Dikeli on the mainland opposite Mitylene; the patient had fallen ill on the island and fled to Dikeli; microscopical examination showed the presence of plague-like bacilli.

In Odessa a fireman employed on a Russian steamer engaged in the Egyptian trade fell ill of plague at the end of June (Old Style) and was removed to hospital, where he died on the 1st (14th) July. The post-mortem appearances were those of plague and the diagnosis was confirmed bacteriologically. The ship is said to have been in the Odessa docks undergoing repairs for the preceding two months. A hospital assistant who took part in the necropsy on this patient pricked his finger and on the 4th (17th) July he also developed symptoms of plague. It is noteworthy that at the same time, according to the Russian papers, an unusual mortality was observed among field rats in the country round Odessa and also in the refuse heaps of the town itself; no evidence as to the cause of this rat mortality has yet been published.

At the end of May a small outbreak of plague occurred in the suburb of Arkhierei, on the shores of the Volga, opposite the town of Astrakhan. On May 24th and 25th (Old Style) three fatal cases were observed here in members of the same family; they lived (or were employed) in a cooper's establishment where some 70 persons were at work. The place was isolated and no other cases occurred, save one doubtful one in a Cossack member of the guard by which the place was cordoned. A bacteriological examination in this case gave negative results. From this centre infection seems to have spread up the Volga. In a village called Peschanka, in the district of Tsaritsyn, there were eight cases of suspected plague between June 28th and July 9th; most of them were of mild character but two died. These cases, it may be added, only became known accidentally; the village priest drew attention to the unusual nature of the disease and the fact was reported to the Saratof authorities. The village was cordoned with troops and there appears to have been no further spread of the infection in the neighbourhood. A bacteriological examination of some of the cases showed that the disease was plague. In the Kirghiz steppe seven cases of plague were reported to have occurred in July or August; the fact was merely stated, without further details, in the Russian paper *Tvarishtch* of August 2nd (15th), which quoted it from an Astrakhan journal, the *Astrakhanski Listok*. It will be seen that information regarding the behaviour of plague in these regions has been very scanty and incomplete.

Constantinople, Oct. 16th.

## THE INTERNATIONAL CONFERENCE ON TUBERCULOSIS.

(FROM OUR VIENNA CORRESPONDENT.)

(*Concluded from p. 1192.*)

THE second subject discussed at the conference was the Notification of Tuberculosis. This question was dealt with in the large hall of the Gesellschaft der Aerzte, where Professor CHROBAK, the president of that society, welcomed the members of the conference. This spacious hall, in which every week the leading physicians and surgeons of Vienna assemble for scientific discussions, has seldom witnessed a more brilliant gathering. The introductory address on Notification was delivered by Professor VON SCHRÖTTER who explained the present state of this delicate question. He said that the opinion of the majority of medical practitioners was at present in favour of notification, but there was some divergence of view as to which cases should and which should not be reported. Some considered that cases of manifest tuberculosis should be notified, whilst others would restrict notification to advanced and dangerous cases. Professor von Schrötter's opinion was that all cases without exception ought to be brought to the knowledge of the authorities who must be empowered to take all precautions necessary for the protection of the public. Those who were opposed to such measures had raised the objection that notification with its inevitable consequence, the observation kept on the patients by the sanitary authorities, would be detrimental to the persons notified, both as regards their social position and also as regards their opportunities of obtaining employment. There was, however, little or no force in this objection because secrecy would be observed in connexion with notification. An essential part of the scheme would be the provision of sanatoriums, "open-air houses," and other institutions for the purpose of treating tuberculous patients and instructing them in the hygienic principles which they must follow on returning home. Such institutions could not fail to be regarded as a necessity if the eminently dangerous nature of tuberculous infection was taken into consideration. The means of diagnosing tuberculosis have been recently augmented by the ophthalmo-reaction of Calmette and Pirquet's cutaneous reaction, so that the diagnostic injection of tuberculin was no longer necessary. The reaction was not accompanied by any untoward effect.

Dr. NATHAN RAW (Liverpool) said that he did not see the necessity of notifying all cases.[1] He would notify only

[1] See THE LANCET, Oct. 26th, 1907, p. 1150.

the serious ones and was opposed to coercive measures of any kind. The main object to be kept in view was the education of public opinion in regard to such matters. Tuberculosis being a chronic disease could not be dealt with in the same manner as other infectious diseases.

A few non-medical men also spoke on this subject. One of them was the President of the Berlin police, Herr VON GLASENAPP, who in his official capacity has often to deal with the statistical material collected by the board of hygiene. He moved a proposal which was eventually adopted and was to the effect (1) that notification was necessary in fatal cases of tuberculosis of the lungs or larynx and if a tuberculous patient changed his place of abode; and (2) that notification was desirable in all other cases of tuberculosis of the lungs and larynx.

Dr. HERRMANN, a member of the Bohemian Diet, speaking on the legal aspect of the question, said that it was right and proper for the State to interfere with the personal liberty of an individual in a case of infectious disease. Penalties ought to be inflicted for disregard of necessary medical precautions against the spread of disease and persons known to be suffering from chronic communicable disease ought not to be allowed to marry. Special legislation for the prevention of contagious diseases ought to be made possible by the combined efforts of medical men, jurists, and politicians.

Dr. FREUND advised voluntary notification, whilst Dr. FRÄNKEL seconded Herr von Glasenapp's proposal. Dr. HOLMBOE (Christiania), in supporting this motion, which, as already mentioned, was finally adopted, said that in his opinion notification would not increase the fear of infection whilst the experience of Norway might serve as an example how well the system of compulsory notification worked. The only difficulty was to be found in the possibility of an invidious discrimination being made between patients, according as they might belong to the well-to-do or to the humbler classes. This objection could, however, be easily overcome.

The early part of the third and last day of the conference was devoted to the discussion of the third subject—namely, the Cost of a Sanatorium for Patients of the Middle and Lower Classes (*eine Volksheilstätte*). The discussion was opened by Professor PANNWITZ who summed up his remarks as follows. Sanatoriums in which patients of the middle and lower classes might receive hygienic and dietetic treatment were, in the present state of knowledge, an absolute necessity for the treatment of tuberculosis. Their main value consisted in the continuous medical control exercised over the patients who were at the same time taught to observe hygienic rules. As the expenditure incurred in the treatment of this disease was very large certain general ideas as regards the building and administration of such institutions were necessary. The sanatoriums had to be lodging houses rather than hospitals, and they could be built at a cost of £200 per bed. After an animated discussion it was resolved to appoint an international commission to study the question of the cost and Dr. Williams (London) was one of those who were elected.

In the afternoon Dr. FLICK (Philadelphia) invited the conference to hold its meeting in Washington in 1908. The official languages, which at present were English, German, and French, would be increased by recognising Spanish as well. One week would be devoted to the scientific work of the Congress and two weeks to pleasure trips in America. The invitation was accepted amid great applause.

Professor VON SCHRÖTTER, in summing up the principal results arrived at by the conference, said that the discussion had not solved the whole problem of the channels of infection but had only elicited that infection might take place by various channels, two of them being inhalation into the respiratory and ingestion into the alimentary tract. Science was, in fact, at present only at the beginning of learning.

Dr. SORGO emphasised the necessity of studying the question of predisposition. He maintained that the predominant factor in the causation of pulmonary tuberculosis was not the mode of entrance of the infection but the virulence of the bacilli in relation to the resistance of the individual attacked. He moved that the subject of Predisposition should be discussed at the next conference.

The motion was adopted.

Dr. SCHLOSSMANN (Düsseldorf) said that in tuberculosis affecting young children in whom its manifestations appeared in their purest form and type the inhalation theory did not hold good.

In the last part of the day, when Dr. C. THEODORE WILLIAMS (London) was in the chair, Dr. NEUBECKER discussed some legal questions connected with tuberculosis. He said that one of the most important of them was the relation of pulmonary tuberculosis to marriage, but there were only very few States which had laws dealing with this subject and nearly all States agreed in not making tuberculous disease a ground of divorce. On the other hand, it might be legally possible to take children away from parents who were suffering from communicable disease, but he was not aware that this had ever been done by any legal authorities.

Professor MEDIN (Stockholm) read a paper on the Unnecessary Fear of Infection of Children by Cow's Milk. Not bacteriology alone but clinical observation must give an answer to the question. In his hospital wards two "epidemics" of tuberculosis had occurred. All the children were fed with the same milk but only the occupants of a certain ward were victims of the epidemic. Amongst 595 cases of post-mortem examinations of tuberculous children there were only six in which the primary seat of the disease was in the intestinal canal, whereas there were 275 in which the lungs were affected. It was therefore quite unreasonable to assert that milk had an important effect in originating tuberculosis. Most likely the personal contact of the children with one another and the nurses (wet nurses) must be taken into calculation.

Dr. WINKLER then spoke on the protection of railway travellers against tuberculosis. He said that the best method of disinfecting railway carriages was to use formalin, together with steam from the engine. It was very essential that the railway men should be instructed as to the possibility of the spread of pulmonary tuberculosis by uncleanliness.

After a few papers of chiefly local interest had been read by Dr. PANNWITZ, Dr. TAUSSIG, and Dr. RUTHY, reports of the representatives of the various countries dealing with the progress of the fight against tuberculosis were presented. Several honorary members of the international grand council were then elected, amongst them Professor CLIFFORD ALLBUTT (England), and all the members of the conference, as well as the governmental and municipal representatives, and their ladies were invited to a farewell dinner at the Ministry of the Interior.

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

### *Bad Tinned Food by the Ship Canal.*

AT a meeting of the Manchester port sanitary authority held yesterday Mr. W. F. Dearden, the medical officer, stated that among a large quantity of canned goods which had been seized and destroyed as unfit for food were 254 tins of tomato purée, one-half of which was found to be "burst, blown, or leaking," and the other half too bad to go into circulation. At the public health laboratory some were found decomposed from the presence of yeast fungus and all were contaminated with lead and tin. A large number of the "blown" tins had been "faked"—i.e., the gas had been let out and the openings re-soldered. Mr. Dearden thinks it probable that owing to the increased price of fresh beef in America and the consequent decrease in the amount of canning a considerable quantity of meat canned before the stringent regulations of 1906 had been brought into use. This older material required more careful inspection than that freshly packed. Sometimes the contents of the tins were liquefied "from contamination with lead and tin from the solder and sides of the can" Mr. Dearden stated also that "a considerable amount of this class of goods came from London—where they refused to accept it—to Manchester, where there appeared to be a fair trade done in it." This is not a pleasant idea for those interested that Manchester should be the "dumping-ground" for meat unfit for London. There is some difficulty about the legal position of the authority in trying to put a stop to this trade, but the clerk said "the whole thing was going to be threshed out in the police court within the next 14 days in connexion with a case now pending."

### *A Peculiar Case.*

An inquest was held a few days since at the Manchester coroner's court concerning the death of a man, aged 46 years, who had been employed as a disinfector for six years in the sanitary department of the corporation. His wife said that he frequently complained of pain in his eyes and nose and

sometimes vomited. He worked with chloride of lime which he mixed himself and he had to make it of a certain strength. The symptoms mentioned only came on after he went into the corporation's employ. The man had stated that the solution had latterly been much stronger and if he did not use it he would get the "sack." The manager of the cleansing department in Oldham-road said that Haworth had been for six and a half years a disinfector and had practically used disinfectant every day. The strength of the solution seems rather uncertain but it was given to the men and diluted, five pints of the solution to a gallon of water. Haworth's duty was to wash the walls, &c., of houses where there had been infectious cases. On Oct. 26th he was admitted to the Monsall Hospital, said to be suffering from anthrax. But Dr. A. K. Gordon, the medical superintendent, said there were no traces of anthrax and that he was obviously dying from kidney disease. A certificate was subsequently given that he had died from the effects of kidney disease but the relatives thought that he had died from poisoning of the system in consequence of his employment. Dr. Gordon was present at the post-mortem examination performed by Mr. E. D. Telford and agreed with the latter that there was chronic Bright's disease which was the cause of death. In his evidence Mr. Telford said he had never known or read of a case where chlorine had initiated a disease of this kind but that workers in chlorine do become dyspeptic. He saw no reason to suspect that in this case it would even accelerate death. The coroner said it was clear from the evidence that the man's occupation had had nothing to do with the cause of death but it was of importance to have it cleared up, as the work was necessary and a considerable number of men were employed in it. A verdict in accordance with the evidence was given. It seems strange that the man should be admitted to the Monsall Hospital for anthrax which had no existence, that the real disease should not previously have been noticed, but not perhaps altogether strange that he himself should have blamed the fumes of chlorine.

Nov. 5th.

## WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

*Aberystwith College.*

IN February, 1903, the council of the Aberystwith College of the University of Wales was informed by Mr. David Davies of Llandinam that, in conjunction with his mother and sisters, he was prepared to bear the entire cost of the erection and equipment of new chemical laboratories in connexion with the College. This offer was at once accepted, and although at first some difficulty was experienced in selecting a site, a suitable position was at length decided upon on Buarth Mawr in an elevated position overlooking the town. The cost of the entire scheme was estimated at £20,000 and this sum has been practically expended. The building was formally opened on Nov. 1st by Mr. Asquith.

*Swansea Medical Officer of Health.*

At a recent meeting of the Swansea town council Mr. Ebenezer Davies expressed a desire to resign the position of medical officer of health which he has held since the year 1865. During this period the population of the town has more than doubled and the sanitary requirements have increased to a corresponding degree. Although engaged until the past few years in a busy practice Mr. Davies devoted a large portion of his time to the duties of his office and lost no opportunity of becoming familiar with the most recent advances in sanitary matters. At the last meeting of the sanitary committee of the corporation it was suggested by a deputation from the Swansea Medical Society that Mr. Davies should be appointed as consulting medical officer of health. The committee accepted the suggestion and will recommend the council to make the appointment at a salary of £100 per annum.

*West Wales Joint Asylum.*

The asylum at Carmarthen serves for the needs of the inhabitants of the counties of Carmarthen, Cardigan, and Pembroke, where there is a total population of over 280,000 persons. There are upon an average 650 patients in the asylum. For several years past the reports of the Commissioners in Lunacy on the institution have not been altogether satisfactory. In 1902 they stated that the asylum was overcrowded, there being 26 patients in excess of the proper number. In the female hospital sick room the 17 beds were occupied and in addition 12 patients were sleeping on the floor. The last report of the Commissioners, which was made after their visit to the asylum early in October, called attention to the inaction of the committee of visitors in giving effect to previous recommendations and stated that it was not improbable that the question would have to be considered of reporting to the Secretary of State that the several local authorities concerned had failed to provide adequate asylum accommodation. The principal matters which have been neglected by the committee appear to be the provision of proper fire exits, the treatment of the sewage, and the reconstruction and equipment of the laundry where there is no suitable machinery and consequently much of the washing has to be done in the wards. Five years ago arrangements had been made for the treatment of the sewage and plans had been approved for converting the laundry buildings into a steam laundry but nothing further has been done owing to a dispute between the three county authorities as to certain financial adjustments. The very definite threat contained in the last report of the Commissioners ought to awaken the members of the three councils to a sense of their responsibilities. It is only fair to state that there has now been completed an isolation hospital with accommodation for three patients of each sex.

Nov. 5th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*The Care of Feeble-minded Children in Glasgow.*

A SHORT time ago there was formed in Glasgow an association for the care of defective and feeble-minded children. A home was opened at Kirkintilloch in a suitable house with 15 acres of ground around it and an excellent garden. The rent of the house was £80 and the directors acquired an option of purchase. The home after structural alterations was able to provide accommodation for 25 girls, the children being chiefly drawn from the area of the Glasgow and Govan school boards. At the first annual meeting of the association held last week an appeal was made for £2500 to enable the directors to purchase the house. Sir John Batty Tuke, who was present at the meeting, spoke very strongly in favour of the institution. He pointed out that the class of girls whom they were striving to help were dangerous members of society, inasmuch as they had little power of self-control or of resisting temptation, and one could not help believing that after leaving school, if they received no protection from such institutions, they would sink inevitably and come to constitute no small proportion of the unhappy section of society who had fallen by the way. Dr. John Macpherson, Commissioner in Lunacy, referred to the fact that the association was much hampered by lack of statutory powers to retain children under its charge against the wishes of the parents who might often be unsuitable guardians for them. He said that the State was slow to interfere in all cases but seemed to think that the time would come when the State would do the work which the association was now doing, not only in Glasgow, but in every part of the country.

*Medical Slander Action.*

In the court of session an action has been raised by a house surgeon in Perth Infirmary against Sir Neil Menzies for £1000 damages in respect of alleged slander. The pursuer complained of a letter to the press in which, he said, the defender represented him as ignorant of his duty as a medical man and careless and indifferent as to the performance of his duties. The defender said that he had no intention of making any imputation against the professional or personal character of the pursuer. He frankly admitted that the letter was written under a misapprehension and he withdrew it, and made no reflection whatever on the pursuer. The case was settled out of court. The actual terms of the settlement have not been disclosed but the defender withdrew the letter complained of, expressed regret, and paid judicial expenses.

*Aberdeen Ophthalmic Institution: Annual Meeting.*

The annual meeting of the subscribers to the Aberdeen Ophthalmic Institution was held in the institution on Wednesday, Oct. 30th. Principal Lang presided. The annual report of the directors was submitted. During the

year the institution has been called to deal with a serious epidemic among school children, the average number of such cases having increased from 27 during the previous year to 124 during the past. The new cases treated numbered 4816 against 3621 the previous year; and the total attendance had more than doubled, having increased from 10,916 to 21,887, representing an average daily attendance of about 70. The number of in-patients was 61 during the year, compared with 35 the previous year. The total income, including special donations of £100 from the trustees of the late Mr. James Crichton, £40 from the School Board of Aberdeen, and £20 from the Northern Coöperative Company, amounted to £475 as compared with £173 the previous year. Subscriptions by employees in various engineering, granite, and other works showed a gratifying increase. There was a credit balance this year of £171 compared with a debit balance of £104 during the previous year. On the motion of the chairman the report was approved of unanimously.

Nov. 5th.

## IRELAND.

(FROM OUR OWN CORRESPONDENT.)

*The Tuberculosis Exhibition.*

Sir R. Douglas Powell, President of the Royal College of Physicians of London, has kindly consented to give the first lecture at the Tuberculosis Exhibition in Belfast. In the town-hall, Portadown, on Oct. 31st, at a largely attended meeting, the chairman of the town council presiding, it was decided to form a branch there of the Women's National Health Association of Ireland and to ask that the Tuberculosis Exhibition should be sent there. The High Sheriff of Antrim is summoning a meeting at Ballymoney on Nov. 8th to consider the advisability of asking that the exhibition shall visit that town in North Antrim.

*The Health of Belfast.*

At a meeting of the public health committee held on Oct. 31st it was reported that the death-rate was 23·2 per 1000, which is very high, and from the principal infectious diseases 2·8. Measles is very prevalent at present, and it was recommended, on the suggestion of the superintendent medical officer of health, that the principal teachers of the primary schools should be requested to give the health department information of cases of infectious disease occurring among the pupils or in the families members of which attend their schools. It was decided to recommend the city council to adopt "The Act to Provide for the Early Notification of Births (1907)."

*Viceregal Visit to Belfast.*

Last week their Excellencies the Lord Lieutenant of Ireland and the Countess of Aberdeen paid a State visit to Belfast, their objects being, His Excellency's to open the new technical school and Lady Aberdeen's to found a branch of the Womens' National Health Association, of which she is president. On Tuesday afternoon, Oct. 29th, in the City Hall, the Lord Mayor, Lord Shaftesbury, presided over one of the most representative meetings ever held in Belfast, the only drawback being that the big reception room of the City Hall was far too small for the immense audience who attended, among whom were persons of all political and religious denominations. The Protestant and the Roman Catholic bishops of the diocese were both present and the moderator of the General Assembly sent an apology conveying his warm sympathy with the object of the gathering; so also did his Eminence Cardinal Loyve and the venerable Primate of all Ireland, Dr. Alexander. After Lady Aberdeen had explained the objects and aims of the association, resolutions were passed welcoming the formation of a branch of the association in Belfast and thanking Lady Aberdeen for her inspiring address. The following members of the medical profession spoke at the meeting:—The President of the Ulster Medical Society (Dr. J. McCaw), the High Sheriff of Belfast (Dr. P. O'Connell), Dr. J. King Kerr (chairman of the public health committee), Professor J. A. Lindsay, and Sir John Byers, to whom the Lord Lieutenant referred as the gentleman "who had been the right-hand man in connexion with all the preliminaries of that movement and who had displayed remarkable zeal in connexion with the promotion of the objects which the association had been formed to obtain." On Oct. 31st Her Excellency opened the bazaar on behalf of the funds of the Belfast Hospital for Sick Children, and in the afternoon she and the Lord Lieutenant visited Mr. Wilson's new model dairy at Belvoir Park. Their Excellencies' visit has been a marked success.

*Belfast City Corporation.*

At the quarterly meeting of the Belfast corporation held on Nov. 1st a report was presented by the superintendent medical officer of health in regard to the period between Sept. 15th and Oct. 19th. During this period 175 cases of infectious disease were notified—viz., 19 of typhoid fever, 39 of scarlet fever, 27 of simple continued fever, three of puerperal fever, 21 of diphtheria, nine of membranous croup, 34 of erysipelas, and 13 of cerebro-spinal fever. In the five weeks ended Oct. 19th 125 deaths occurred from infectious diseases, 76 from pulmonary tuberculosis, 57 from respiratory diseases (excluding pneumonia), and 47 from pneumonia (making a total of 180 from chest affections). The average death-rate was 18·2 from all causes, from infectious diseases 3 5, and from chest complaints 5·0 per 1000. As compared with the previous month both the general death-rate and that from infectious diseases are increased.

Nov. 5th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*The Treatment of Whooping-cough.*

AT the Therapeutical Society on Oct. 22nd M. Eissier advocated the use of a saturated solution (2·8 per cent.) of fluoroform in water for the treatment of whooping-cough. For small infants the dose is one drop after each paroxysm on the first day of treatment and as the attacks of coughing grow less frequent two or three drops after each, not more than 100 drops being taken.[1] To children of from two to four years of age the limit is 30 grammes a day in teaspoon doses. Under this treatment the number of paroxysms rapidly becomes less and at the end of a week there are rarely more than half a score in the day. In four years M. Eissier has treated 117 cases in this manner and they were all cured irrespectively of age.

*The Radio-active Emanations of Thermal Springs.*

On the same day at the Academy of Medicine M. Moure, professor at the School of Pharmacy, described the radio-active emanations and rare gases which are given off from certain thermal springs of the Est and the Midi. These two kinds of efflux bear a constant relationship to one another, as might have been expected from our present-day knowledge of the transmutation of radio-active emanations into helium. The output of this gas may be considerable, the spring of Lymbe in Bourbon-Lancy alone giving off as much as 10,000 litres of helium annually. At that place there is a method of obtaining this gas very much less costly than that which has hitherto been practised of extracting it from extremely rare minerals at a price prohibitive for ordinary purposes. Similar observations have been made at Plombières and Luxeuil. Sir William Ramsay's recent discoveries of the effects of radio-active emanations acting on water and copper sulphate and giving rise to argon, neon, and lithium by a veritable transmutation of elements give these researches a peculiar interest.

*A Victim of Duty.*

Dr. Ronnaux, chief surgeon at the Saint-Julien Hospital at Cambrai, was recently operating there when he pricked his thumb with a splinter of bone. The wound was infected and tetanus set in. An eminent surgeon was called in haste and he amputated the arm, but in spite of this intervention there is little hope of saving Dr. Ronnaux's life.

*The Toxic Effects of Naphthalene on Red Blood Corpuscles.*

Dr. J. Gaube, Dr. du Gers, and Dr. J. Tribot presented before the Academy of Medicine on Oct. 22nd a study of this subject. They have found that when naphthalene is introduced into the body, either by the digestive or respiratory tract, it splits up in the following manner: three molecules of naphthaline give one molecule each of naphthol A and naphthol B, one molecule of benzene, four molecules of carbonic oxide and water. Their experiments

[1] Our correspondent does not say in what period of time but presumably he means 24 hours.—ED. L.

further prove that the vapour of naphthaline is a poison to the red blood corpuscles on account of the carbonic oxide which it produces; this results in the slow type of asphyxia which is all the more dangerous in that its effects are produced gradually and take a long time in passing off.

*Surgery of the Liver.*

At the Chirurgical Society on Oct. 16th M. Souligoux communicated a series of 16 operations on the biliary passages, with 12 cures and four deaths. The cases included seven of cholecystotomy, which was done for the following conditions: one for rupture of the gall-bladder, one for suppurative cholecystitis following on typhoid fever, one for obliteration of the bile-duct with angio-cholitis, three for obstruction of the bile-duct by cancer of the pancreas, and one for cholelithiasis without icterus, in which a supplementary cholecystenterostomy was performed. He did four simple cholecystectomies, two for cholelithiasis, one for cholecystitis, and one for cancer of the gall-bladder; three other cholecystectomies were done with drainage of the gall-bladder. The last two operations were for duodenotomy and implantation of the bile-duct respectively, the first to remove a calculus from the ampulla of Vater in a patient with permanent obstruction of the bile-duct, and the latter in a woman who had suffered some months previously from obstructive jaundice with very severe paroxysms of pain.

*Wounds of the Ear Produced by Firearms.*

On Oct. 23rd M. Piegné brought before the Chirurgical Society the subject of the treatment of wounds of the ear which it was formerly the custom to let alone, a plan which is no longer followed by surgeons. The two most common types of these wounds when produced by firearms are as follows: either, as most often happens, the bullet pierces the external auditory meatus and buries itself between the pyramid and the mastoid process, or it penetrates along the axis of the pyramid, perforating the drum and reaching the internal ear, in which case the carotid artery may be wounded. According to Borjenski, different lesions follow these two types of injury. In the first a fissure is produced which may implicate the vault of the tympanum and damage the inner ear more or less, and in these cases deafness follows immediately. In the second type the fissures are multiple and the petrous bone is split, which may result in meningeal complications. In no case should the surgeon fail to interfere, either by the retro-auricular or the anterior route. M. Piegné prefers the former with certain modifications of the conventional operation which facilitate the finding of the bullet, and what is more important, the disinfection of the wound.

Nov. 5th.

## ITALY.

(FROM OUR OWN CORRESPONDENT.)

*The Health of the Pope.*

HIS Holiness has been ailing for some time, though with characteristic energy he has struggled through the audiences and the multifarious business which is his "portion" from day to day. After the summer heat, which each successive year finds him less able to withstand—missing, as he does, the

"Sea-pulse of the still lagoon"

responsive to the air currents from the Rhaetian Alps—he was ill-prepared for the heavy, stifling sirocco which has been reducing all Italians to limpness. That south-easter, happily described as bringing "heat without sun, wind without air, and rain without freshness," did not spare the Janiculan, never bracing at the best of times, and so the Holy Father, after days of oppression and difficulty of breathing, descended to the Vatican gardens, there to get whatever coolness or breeziness was to be had. Accordingly, he "took the air" in these once delightful but now (from motives of economy) sadly neglected walks and alleys, and one day last week spent from an hour and a half to two hours in gentle exercise. But the damp due to the torrential rains which have been flooding Italy induced a chill and this in turn was followed by a resuscitation of the gout to which he is subject, accompanied by swelling of the lower limbs. On Wednesday last his body physician—the "archiatra," as he used to be called—Dr. Petazzi, was summoned to his bedside and ordered absolute rest and the cancelling of all immediate engagements. This prescription, however, His Holiness observed in very perfunctory measure and, though manifestly suffering, went through the ordeal of "udienze" and "ricevimenti" with more punctuality than prudence. On the morning of All Saints' Day he even celebrated mass in his private chapel, his sisters and nephew being present, and thereafter proposed a turn in the Vatican gardens. But the sudden recurrence of gouty pains and aggravated swelling interposed their veto. He was taken back to his apartments and placed under the surveillance of his body physician, reinforced this time by Dr. Marchiafava.

*The Inundations in the "Alta Italia."*

"Après moi le Déluge," quoth the Earthquake; and Italy has barely recovered from the shock of the latter in the south when she is shrinking under the play of the former in the north. It is difficult to say which of the two visitations has caused more physical suffering. Actual loss of life has indeed been immeasurably greater from the "telluric storm," but for the misery and martyrdom entailed by houselessness and hunger under prolonged and pitiless downpour the floods have proved the sadder ordeal. The Ticino and the Adige (to say nothing of minor affluents) have raised the Po to the top limit of its embankments and at some points the artificial dykes, laboriously constructed to keep it in bed, have been broken through and the wildest scenes of devastation and ruin have followed. These have already been described in the lay press and the thousands of the agricultural population who have been driven from homestead and hamlet to seek the shelter of the neighbouring towns are making drafts on the resources of the charitable, already drained by their fellow sufferers in Calabria. The situation is indeed a distressing one, and when Italy has surmounted it her next care must be to minimise the causes which make floods within her borders the most disastrous in Europe, those of Spain even not excepted. The reckless tree-felling, unbalanced by collateral tree-planting, has had its Nemesis in both those Latin countries, and while Spain lost her mercantile marine from the exhaustion of her timber Italy has to draw upon Austria and even Scandinavia for the shipbuilding material which she once possessed in abundance. And now inundation, aggravated from year to year, is persuading her of the necessity of reclothing her denuded hill-sides and organising schools of forestry to instruct her legislature how best to subsidise the efforts to rehabilitate despoiled nature. At present she has only the school at Vallombrosa, and that a meagrely equipped one, to furnish forth the policy and the *personnel* demanded by the situation.

Nov. 3rd.

## BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

*"Willing to Oblige."*

A MEDICAL man who is a Hungarian by birth but practises in Vienna has sent the following circular to his countrymen, the medical men practising in Hungary:—

In the event of your desiring to send a patient to a Vienna professor for consultation you will greatly oblige me, your compatriot, by sending the patient in the first instance to me in order that I may accompany him to the consultant selected. I have now been living in Vienna ten years, so I know very well which specialist ought to be consulted in any given case. If you are uncertain whom to select I undertake to choose the best and most suitable specialist for the case and also to keep you informed as to the patient's condition and progress. I am always ready to supply you with particulars relative to the consultants. I guarantee that whatever I may do in your behalf will be honest, conscientious, and professionally correct.

This letter has been deeply resented by the Hungarian medical public because the Budapest specialists have for a long time been complaining that most of the country practitioners in Hungary send their patients to Vienna for consultants' opinions instead of to Budapest, the centre of Hungarian medical science. No one would object to a medical man sending a patient to Professor Pollitzer, Professor Chiari, Professor Neusser, or others of similar position, but if patients are sent to Vienna with diseases for the treatment of which there are well-known experts in Budapest then Hungarians are justified in feeling their national pride offended. For his unpatriotic proposal of sending our patients to Austrian specialists the writer of the above

circular will be boycotted by the Hungarian medical profession.

*A Contemplated Medical Strike.*

Hungary is the motherland of the so-called sick clubs and there is scarcely a small village without one of these organisations. These clubs do not promote the material welfare of the medical profession neither do their leading men seem to care very much about the health of the members. It is no exaggeration to say that about 40 per cent. of the contributions paid by the members are spent on office and administrative expenses. Thus only 60 per cent. remain to pay the medical officers, the accounts for drugs, and the so-called food-money used for the support of families of sick members. Up to now the medical men have suffered in silence, because they hoped that their position would be improved on the coming into force of the new Workmen's Compensation Act (dated July 1st, 1907). This anticipation, however, has not been realised, for although the number of members has been doubled in comparison with the first half of this year the medical salaries have not changed at all. As a natural consequence the club medical officers are with unanimity claiming remuneration commensurate with the work done but their request has been flatly refused by the authorities of the sick clubs. This refusal has moved the whole medical profession of the country to come to the aid of the club medical officers. After long negotiations it was decided that a memorandum, signed possibly by all the members of the Hungarian medical profession, should b handed to the Workmen's Insurance Office which is controlled by the State. This memorandum asked the Office to accept the "free choice" system with the following conditions: 1. A list shall be circulated among the medical men in every town where there is a sick club and every member of the profession shall be allowed to enter his name in case he desires to work for the sick club under the conditions mentioned below. 2. Members of the sick clubs shall be at liberty to select as their medical attendant any medical man whose name is so entered. 3. The sick club shall pay the medical officers 5*s.* for every unmarried member and 7*s.* 6*d.* for every married member for one year. No medical officer shall attend more than 600 members. 4. Members have the right to change their medical attendants on Jan. 1st every year. 5. A disciplinary committee consisting only of medical men shall investigate and decide complaints which may be made by club members. From the foregoing it will be seen that the claims of the medical men are exceedingly modest. I hardly think that any labourer would undertake to be at another person's disposal day and night for the ridiculously small sum of 5*s.* a year but the authorities of the sick clubs of certain towns have already signified their intention to refuse the application of the medical officers. A further communication signed by 4200 practitioners (there are altogether 5000 in Hungary) has therefore been sent to the Workmen's Insurance Office stating that all the undersigned medical men have promised not to fill any position in the sick clubs if the free-choice system is not adopted on and after Nov. 1st, and that if these terms are refused the club members will be treated as ordinary patients and regular fees will be charged.

*Dysmenorrhœa.*

At a recent meeting of the Budapest Royal Society of Medicine Dr. Tuszkai Ödön read a paper on Dysmenorrhœa. He said that in some cases the static electric spark was very beneficial and sometimes general faradisation or lumbo-abdominal galvanisation would suffice to prevent pain at the monthly periods, but generally some form of intrauterine electrical treatment would be found necessary. If there was stenosis or membranous dysmenorrhœa then strong galvanisation with the negative pole was indicated. In cases of stenosis it was advisable to begin with a mild current and then to apply stronger currents. He had had under his care several cases of cicatricial stricture, which yielded to treatment with a mild galvanic current. If from any reason the whole canal were very small it would be better to use an instrument that could be passed and to act upon the tract throughout its entire length; at the next sitting a larger sound could be used, and so on. The canal was enlarged by negative and contracted by positive galvanisation. The galvanic current must not be applied every day. Twice a week was quite often enough and after each application the patient was told to rest for a couple of hours and afterwards to take a tepid bath. Too frequent applications did not allow time for the parts to heal.

Nov. 1st.

## CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

*The Rite of Circumcision.*

THERE is an outcry in the local Turkish newspapers against the utter ignorance of the operators performing circumcision on Mussulman children. These operators lack the necessary skill and almost never take the requisite hygienic precautions. Circumcision is here very frequently performed wholesale on quite large numbers of boys and youths of different ages. This practice in itself is a great drawback and is often fertile in all sorts of bad results. The attention and care in such cases are seldom very thorough. According to the newspaper *Sabah* the instruments used are almost always old and are never properly cleaned or disinfected. It is, therefore, quite a common occurrence for the circumcised to contract diseases which are sometimes of a grave nature. It has been in consequence decided to give orders to the municipal medical men to instruct carefully the individuals performing the little surgical operation of circumcision in the scientific methods of doing it and to watch, from time to time, over their way of procedure. The public vaccinators will also receive the same instruction and will be able later to perform circumcision themselves. It appears that the rite of circumcision is, contrary to the generally accepted view, not entirely of Semitic origin. It is very probable that the Semites derived it directly or indirectly from the Egyptians. The writer of the article on circumcision in the British Encyclopædia even thinks that it might have been derived from an entirely non-Semitic source. There is no reference to the rite in the Koran, though it was a primitive Arabian custom to circumcise youths on their reaching puberty—i.e., between the tenth and fifteenth year (generally, however, at the age of 13). This appears not only from Genesis xvii. 25 but from the express statement of Ibn-al-Athir and from a remarkable passage in the life of the old Arabian poet Dhu-l-isba. The worshippers and preachers of Islam carried the rite from Arabia to Persia, India, and also to Turkey. It is quite likely that the Israelites received it from Arabia too. Wilkinson in his remarkable book on the Egyptians says that this people were circumcised prior to the immigration of the Hebrews, as appears from the representations on the very earliest monuments, such as the bas-relief discovered in the temple of Chunsu at Karnak. This bas-relief represents a scene of the circumcision of two children who are supposed to have been the sons of Rameses II., the founder of the temple. Dr. Ebers gives a drawing of it and says that the age of these boys must be between six and ten years. This would agree with the present custom in Egypt, where circumcision is performed (as we read in "Modern Egyptians," by Mr. Edward William Lane) in the fifth or sixth year, though it is often postponed by peasants to the twelfth, thirteenth, or even fourteenth year. Origen asserts that only the priests underwent the operation but this assertion is very probably without any true historical foundation, as there exists no other evidence for it. The rite of circumcision is known also among nations which had no communication whatever with Egypt. It has been well remarked in this connexion that similar causes produce similar effects all the world over. Some years ago I made a trip as ship surgeon to the River Amazon. The s.s. *Obidense* stopped at Manaos on the Rio Negro for about ten days. I then discovered that certain tribes in the vicinity which have no relation whatever to Semitic races have kept up the rite of circumcision from times immemorial. It is also carried out among the Papuans and in Africa among the Kaffirs. It is likely, however, that the latter have borrowed the rite from Mahomedan nations. Interesting in this connexion is the fact that women in some countries are subjected to an analogous rite. Strabo speaks of it as prevaling in Arabia and Egypt. Mr. Lane, too, in the book mentioned above, says that the peculiar custom still exists in those regions as well as on the shores of the Persian Gulf, at Bagdad, Dahomey, and especially in the eastern parts of Africa.

*The Hospital for Women at Hasséki.*

The Sultan has given orders to enlarge considerably this hospital. It has at present 36 beds. This number will be increased and other important alterations will be undertaken. The operation room will be reconstructed and a new pavilion containing 20 beds will be erected for internal diseases. The

kitchens and the apartments for the staff will be henceforward separated from the principal building. It is intended also to provide a consultation room and to enlarge the garden of the establishment.

Nov. 2nd.

## NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

*Report of the Surgeon-General of the United States Army.*

Surgeon-General O'Reilly states in his report to the Secretary of War that during the year ending June 30th, 1907, the health of the army compared favourably with the preceding year. The death-rate was 6·11 per 1000 of strength last year, compared with 6·28 in the previous year, and 14·62 from 1898 to 1904. The death-rate for disease last year was 3·28, being the lowest since the occupation of tropical countries. Tuberculosis was the most fatal cause of deaths in the army, being 0·77 per 1000. Typhoid fever ranks next in fatality but there seems to be a gradual improvement during the past two or three years in its prevalence. The sickness rate from malaria is on the increase, due apparently to the failure to protect from mosquitoes by screens in the Philippines. It is reported that in the department of the Visayas no hospital is screened and in the department of Luzon only three buildings or parts of buildings are thus protected. Venereal disease still has the lead in affecting the efficiency of the army. The admission rate for alcoholism has increased from 30·22 per 1000 to 32·27. This increase is attributed to the abolition of the canteen. Surgeon-General O'Reilly remarks: "This office concurs in the opinion expressed by most medical officers of the army that the abolition of the sale of beer in post exchanges has had much to do with the increase of venereal disease and alcoholism in the army." The medical service of the army is so unattractive that the number of applicants is steadily diminishing, only 24 having appeared at the last examination. Surgeon-General O'Reilly says: "The Army Medical Service has lost much of its attraction for the bright young graduates from our best medical schools and unless a remedy is applied it will be impossible to fill vacancies without lowering the present standard of qualification."

*An Object Lesson in Sanitation.*

The Jamestown Exhibition has been the subject of much adverse criticism, owing to the imperfections of its management as to details. There is, however, on the grounds adjacent an encampment of United States troops which attracts much attention for the perfection of the details of its management. Camp John Smith is located on lands devoted to the cultivation of peanuts. It is marshy, near the shore of the Chesapeake Bay, and only a few feet above tide level. Here, in the open and exposed to the summer sun, are encamped a regiment of infantry, a battery of artillery, and a squadron of cavalry. The conditions of soil, location, and surroundings combine to adapt this camp for the cultivation of flies and mosquitoes, the carriers of infectious diseases, and for the prevalence in their most malignant forms of malaria, typhoid fever, and dysentery. To add to the unhealthiness of the camp the horses of the cavalry and artillery are stabled not fifty yards from the quarters of the men. But during the summer this camp has been free from flies and mosquitoes, although they have swarmed in the kitchens of the restaurants within the grounds. The health of the soldiers has been good throughout the season. The explanation of this exemption of the camp from the pests—flies and mosquitoes—and malaria and enteric diseases is that the camp is under a perfect system of sanitation. Outside the camp is a crematory in which every particle of garbage and refuse is burned twice daily; the mess shelters and kitchens are screened with wire netting, the tents are also screened, and over each bed is hung a mosquito bar under which each man and officer must sleep under pain of court martial; the grounds were all drained and all standing pools of water were treated with oil at frequent intervals; and finally the water used by the soldiers was boiled. Thus this camp has been an object lesson of the value of thorough sanitation of the homes of the people, of far-reaching importance to thousands of visitors to the Jamestown Exhibition.

*Physical Welfare of School Children.*

A committee on the physical welfare of school children has had 1400 such children examined by competent physicians in New York, who report that the prevailing affections from which they are suffering are malnutrition, enlarged glands, and defective breathing. Applying these findings to all of the school children of the city the result would be, suffering from malnutrition 48,000, from enlarged glands 187,000, and from defective breathing 230,000, a total of 465,000. The object of this report is to lay the foundation for a systematic method of examination and treatment of school children suffering from various forms of ill-health. Briefly, the committee would secure the establishment of departments of school hygiene in connexion with boards of education, the duty of which it should be to see that school buildings are so constructed and conducted that they cannot produce or aggravate physical defects and that the school curriculum should be so devised and executed as neither to produce nor to aggravate them; to study the effect of school environment on the child; and to teach hygiene so that the children will themselves cultivate habits of health.

*Registration of Vital Statistics in the United States.*

Dr. Cressy L. Wilbur, chief statistician, Bureau of Census, U.S., states that in 1895 there were only eight States in which there were registrations of deaths and in 1907 the number had increased to 15. In 1895 the registration of births was not made in any State and in 1907 the registration areas of births was represented by only a few interrogation marks in three States. It is estimated that in the light of experience of the slow progress in the past the United States could not have a satisfactory system of registration of vital statistics, including both births and deaths and covering the entire country, much before the middle of the present century. The Bureau of Census has prepared a standard certificate of death to secure uniformity of the data collected, yet many States and cities continue to employ old forms the variety of which is multitudinous, while in other cases the standard blanks have been changed so that the information obtained is frequently entirely different from what it purports to be when returned to the bureau. Dr. Wilbur regards the general indifference of registration officials to the necessity of securing accurate statements of the causes of death as the most discouraging feature in the effort to establish throughout the entire country a trustworthy system of registration of vital statistics.

*Treatment of Inebriates.*

The New York School of Philanthropy is investigating the present facilities for the treatment of inebriates in New York with a view to provide for their care. At present the principal hospitals have alcoholic wards situated generally in some out-of-the-way place as an outbuilding, basement, or attic, which is rarely visited and which consists of cells furnished with only a cast-off cot. Of the number of inebriates who reach the hospitals of the city some estimate may be made from the statement of the medical superintendent of the Bellevue Hospital that of the patients admitted to the hospital in 1906 6453, or 25 per cent. of the total number admitted, were treated for various forms of alcoholism.

*Imprisoned for Selling Cocaine.*

The practice of selling cocaine without prescription has been productive of great harm and stringent laws have been enacted against it. But these laws have not often been enforced. Recently a druggist in New York was arrested for the crime, and on trial was convicted and sentenced to imprisonment for six months. The result has been very beneficial in the prevention of the practice of retailing this and similar drugs to the public.

*Abolishing a Railroad Nuisance.*

The Health Commissioner of Pennsylvania has issued an order forbidding porters on the railroads to brush the clothes of passengers in the aisles of the cars. This practice of porters, for the purpose of securing a fee, has long been tolerated by the public but is now to be abolished as a nuisance.

Oct. 19th.

# Obituary.

## FRANCIS WOODHOUSE BRAINE, F.R.C.S. ENG.

BY the death of Mr. Francis Woodhouse Braine a well-known figure has been removed from the medical profession in London. Born in 1837 he commenced his medical career at St. George's Hospital in 1854. He obtained the Membership of the Royal College of Surgeons of England in 1858 and the Fellowship in 1867. He held in succession the posts of house surgeon, surgical registrar, and demonstrator of anatomy at St. George's Hospital, and of resident medical officer at the Hospital for Sick Children, Great Ormond-street. Although his natural leaning was towards a surgical career, yet he early developed a peculiar aptitude for the administration of anæsthetics, and was encouraged to take up this branch of medicine by his old teacher and much-valued friend, the late George Pollock. About this time another St. George's man, Mr. Henry Potter, who was established as an anæsthetist, decided to relinquish his practice and it was offered to Mr. Braine who after considerable pressure from his friends decided to accept this practice and thus commenced that career which has made the name of Woodhouse Braine of world-wide repute. Few men can have had so wide a hospital experience. He became anæsthetist to the Dental Hospital of London and was amongst the first to introduce nitrous oxide into this country. He fulfilled his duties at this institution for a period of 25 years and upon his resignation was appointed a vice-president of the charity. At Charing Cross Hospital he worked as anæthetist for 18 years and was an educational pioneer by being one of the earliest teachers in London to give systematic instruction to students in the administration of anæsthetics. He also held the office of anæsthetist to St. Peter's Hospital for Stone for 16 years and upon resigning his post was appointed consulting anæsthetist. During his extensive work at the London hospitals he saw his branch of medical science almost completely revolutionised, and he counted for much in the developments which have taken place in the practice of the administration of anæsthetics. Nitrous oxide could not be purchased in cylinders in the early days when Mr. Braine commenced to practise as an anæsthetist, it had to be made at home and conveyed to the patient in a large bag from which the gas leaked in transit, and on many occasions it was merely a matter of distance whether there would be sufficient nitrous oxide remaining with which to obtain anæsthesia. Moreover, the gas was not always pure and previously to administration Woodhouse Braine always inhaled a few breaths himself, a habit which he retained until the very last day of his practice. At first a great partisan for the use of chloroform he very soon became a strong advocate for ether and became very expert in its administration, for which he always employed the Ormsby inhaler. He was a firm believer in the rapid induction of anæsthesia by first giving nitrous oxide to full narcosis and then changing to a full dose of ether, using separate inhalers. Mixtures containing chloroform were very rarely, if ever, administered by him. From this it may be seen that he was conservative in his opinions and, as a matter of fact, the same methods of anæsthetising were employed by him throughout his career. He had the fortunate faculty of inspiring his patients with confidence and in particular with children he was an immense favourite and hundreds will remember the kind old doctor who sent them asleep by means of fairy tales. Not a few operating surgeons could also testify to their gratitude to Woodhouse Braine who had a vast experience and in difficult operations was often able to draw on that experience in a valuable manner.

Woodhouse Braine was instrumental in the foundation of the Society of Anæsthetists and was elected its first president. His contributions to medical literature were all made to the medical journals during the years 1869–72 and were short and practical records of his own practice. He had no desire to be considered a medical writer; he was essentially a practical anæsthetist.

It is difficult to realise to-day that 50 years ago anæsthesia was in its infancy and when Woodhouse Braine began to practise as an anæsthetist the science was in a very experimental state. This stage produced great practical men of whom Mr. Braine was certainly one of the greatest. It was his lot alone of the pioneers to live on in vigour and strength, to see the practical work of his earlier days crowned by the establishment of his branch of medicine on a firm scientific basis, by the recognition of anæsthesia as one of the greatest boons that medicine has given to mankind, and to find its scientific practice carried on by hundreds of able men of a younger generation, most of whom directly or indirectly owed much of their practical knowledge to his teaching.

In his young days Woodhouse Braine had been a great sportsman, being an adept as boxer and swimmer, a good whip, and a devotee of fox-hunting. He was also high in the craft of Freemasonry, being a Past Senior Grand Deacon in the Grand Lodge of England. During the last 12 months symptoms of failing health manifested themselves but he continued his work until the end of July when signs of cardiac failure became apparent and he passed away on Oct. 28th in his seventy-first year, practically dying in harness. The interment took place at Harrow on Nov. 1st, Sir Edgcombe Venning, Mr. John H. Morgan, and a large number of friends being present.

## FREDERICK ALBERT STABB, L.R.C.P. LOND., M.R.C.S. ENG.

Mr. F. A. Stabb died recently at his residence in St. John's, Newfoundland, in his forty-second year. He was born at Torquay, Devonshire, where his father, Mr. Henry Hunt Stabb, was a well-known medical practitioner. Mr. F. A. Stabb took the diplomas of L.R.C.P. Lond. and M.R.C.S. Eng. in 1890 and soon afterwards commenced practice at St. John's where he held the appointments of physician to the fever hospital and assistant surgeon to the Newfoundland General Hospital. Until recent years he took a leading part in athletics, especially in cricket, football, and boating. He was a man of most kindly and benevolent disposition and was highly respected at St. John's. The news of his death was received with regret at Torquay, where his father and grandfather were both well known and esteemed.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Hildebrandt, colonial medical officer at Muanza, E. Africa, from blackwater fever.—Professor Domenico Capozzi, of Naples, at the age of 76 years.—Dr. Roquette of Brussels, from cancer of the larynx, who is believed to have been infected during the course of his extended observations on malignant neoplasms. It is stated that his colleague in these observations, Dr. Jakob, died some 18 months ago also from cancer, which it is supposed that he contracted in the same way.

# Medical News.

TRINITY COLLEGE, DUBLIN.—At examinations held in Michaelmas term the following candidates were successful:—

FINAL MEDICAL EXAMINATION.

*Part I.*—David J. Miller, Edward J. H. Garstin, Alex. K. Cosgrave William A. Nicholson, Richard J. Attridge, William H. Sutcliffe, Harold S. Sugars, Edwin B. Bate, James E. M'Causland, James D. Murphy, Richard D. FitzGerald, Howard S. Millar, and Frederick R. Sayers.

INTERMEDIATE MEDICAL EXAMINATION.

*Part II.*—Henry H. James, Walter E. Adam, Victor W. T. M'Gusty, Hans Fleming, William H. Hart, and Denis J. Stokes.

ROYAL SANITARY INSTITUTE.—A sessional meeting of the Institute will be held at the Parkes Museum, Margaret-street, London, W., on Thursday, Nov. 14th, at 8 P.M., when a discussion will take place on the Smoke Problem in Large Towns, introduced by Dr. Louis C. Parkes, medical officer of health of Chelsea, and Dr. H. A. Des Vœux (as representing the Coal Smoke Abatement Society), and general discussion is invited. The chair will be taken at 8 P.M. by Sir William B. Richmond, K.C.B., R.A. Tickets for admission of visitors may be had on application.

PATHOLOGICAL SOCIETY OF MANCHESTER.—The annual meeting of this society was held on Oct. 9th, Dr. W. E. Fothergill, Vice-President, being in the chair.—The following were appointed officers for the coming session:—President: Dr. J. J. Cox. Vice-Presidents: Dr. W. Milligan and Dr. R. T. Williamson. Treasurer: Dr. A. Sellers. Secretary: Mr. C Roberts. Committee: Mr. E. Stanmore

Bishop, Mr. H. Clifford, Mr. P. R. Cooper, Dr. E. B. Leech, Dr. W. Mair, Dr. R. W. Marsden, Dr. C. H. Melland, and Mr. E. D. Telford. Auditors: Dr. H. H. M'Nab and Dr. A. Ramsbottom.

MUNICIPAL HONOURS FOR MEDICAL MEN.—At the recent municipal elections in the West of England and South Wales the following medical men have obtained seats on the council: At Bristol, Mr. Harry François Devis (Somerset Ward); at Taunton, Dr. James Alexander Macdonald (East Ward); at Bath, Dr. Preston King (Lansdown Ward); at Plymouth, Mr. W. Paul Swain (Hoe Ward); at Totnes, Dr. George John Gibson; at Cardiff, Dr. Robert James Smith (Grangetown Ward) and Mr. James Robinson (Park Ward); at Swansea, Dr. Henry Arthur Latimer (Ffynonau Ward); at Newport (Mon.), Mr. Arthur Edwin Tonks (Victoria Ward) and Dr. Thomas Griffiths Lewis (Liswerry Ward); and at Brecon Mr. George Philip Francis.

AN ISOLATION HOSPITAL AT DOLGELLY.—It will be remembered that 12 months ago reports appeared in THE LANCET of a movement to provide an isolation hospital for infectious diseases at Dolgelly, North Wales. After repeated discussions at that time the matter was left in the hands of a committee of the urban council and instructions were given that inquiries should be made for a suitable site, but at an ordinary meeting on Nov. 1st the committee reported having adjourned the question pending a decision by the council whether, as at present constituted, it was or was not in favour of providing hospital accommodation. Mr. J. E. Fox, in moving that the report should be sent back to the committee, said that resolution after resolution had been passed in favour of the hospital and he emphatically refuted the suggestion that the council's reply was intended to shelve the matter. Mr. John Jones insisted on knowing whether the council favoured the erection of a hospital. Some members had told him that they did not. It was useless for the committee to proceed if it was not supported by a majority of the council. He was still in favour of making provision and regretted that previous negotiations had fallen through. He considered that the council had been trifling with the question. During a discussion it was said that the hospital need not be isolated and that there were empty houses which could be adapted for the purpose. One member protested that larger towns were without provision and that a hospital would be detrimental to a visitors' resort. It was eventually decided to send the report back for reconsideration, and Mr. Fox moved that the council should show whether it agreed with the principle of providing hospital accommodation or not. This was seconded by Mr. Jones and in the end eight members voted for the proposition and three against. In reply to objections against incurring large expenditure, it was explained that the council had only been committed to the principle and that all details were open for further consideration.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on Oct. 31st, Dr. F. H. Champneys being in the chair. Mr. J. Ward Cousins said that he had been requested by the President of the Royal College of Surgeons of England to ask the chairman of the Central Midwives Board what was being done in regard to the payment of medical practitioners sent for by midwives in emergency cases. In reply, the chairman said that the matter would be considered at the next meeting of the Board. A letter was considered from Dr. J. J. Buchan, medical officer of health of St. Helens, forwarding a copy of a scheme adopted by the guardians of the Prescot union for the payment of medical practitioners summoned to assist midwives in emergencies and inviting the opinion of the Board thereon. The Board decided that Dr Buchan should be thanked for his letter and that he should be informed that the Board is unable to express an opinion on the matter submitted. A letter was considered from the Duchess of Montrose urging the approval by the Board as a teacher of pupil midwives of Dr. W. Colquhoun, the lecturer in midwifery at the Govan Cottage Nurses' Training Home. The Board decided that the Duchess of Montrose should be informed that the inquiries instituted on the subject are not yet completed. A letter was considered from Dr. S. Barwise, county medical officer of Derbyshire, as to a scheme for training midwives in that county. The Board decided that Dr. Barwise should be informed that the Board is unable to express an opinion on the scheme except so far as to point out that the proposed lecturer would require the personal approval of the Board. The Board having considered the charges against the midwife Sarah Ann Butterworth decided that she should be censured on her own admission of having failed to explain that medical assistance was necessary in a case of inflammation of the eyes of a child. Dr. S. B. Atkinson moved and it was duly seconded:—

That upon all applications for restoration of a name to the roll the local supervising authority be asked to report as to the desirability of granting the application.

Mr. E P. Young pointed out that to adopt such a motion would be to tie the hands of the Board unnecessarily. In any case of doubt there was nothing to prevent application being made to the local supervising authorities. The chairman observed that the penal cases committee *proprio motu* would naturally consult local supervising authorities in all suitable cases. The motion on being put to the vote was lost by 4 to 2.

UNREGISTERED DENTAL PRACTITIONERS FINED.—The London and Counties Medical Protection Society has just successfully prosecuted three irregular dental practitioners at Old Street police court, London, for contravening the Dentists Act, 1878, by using styles and titles implying that they were registered dental practitioners under the Act. The magistrate fined H. M. Hanreck of 117, Bethnal Green-road, and Joseph Lechem of 197, Whitechapel-road, each the full penalty of £20 under the Act and further ordered them to pay 3 guineas costs each. The third offender, Joseph Weinberg, 81, Whitechapel-road, was fined £10, with 3 guineas costs, a lighter penalty due to the fact that he had been carrying on his business since 1872, six years before the passing of the Act.

PRESENTATION TO A MEDICAL PRACTITIONER.—In the City Chambers, Glasgow, recently, Mr. John Carswell, L.R.C.P. Edin., F.F.P.S. Glasg., was presented with a cheque for £415 and a silver salver, the gifts of many friends "in token," as the inscription on the salver bore, "of their regard for his personal qualities, and in recognition of his services to the community as a member of the town council and other public and philanthropic boards, and of his eminent services to the special department of medical practice to which he has devoted his life." This presentation to Mr. Carswell is the outcome of the sympathy which was felt for him in the city in connexion with his recent misfortune when he was shot at and seriously wounded by an individual whom he had some time previously certified as insane. The presentation was made by the Lord Provost.

DONATIONS AND BEQUESTS.—The treasurers of the Royal National Orthopædic Hospital have received a legacy of £300 under the will of the late Mr. Henry Howard Paul.—By the will of Mr. William Butler (Worcester) £1000 have been bequeathed to Birmingham hospitals.—Mr. John Stirling (London) has by will left £500 to the Ross Memorial Hospital at Dingwall, £500 to the Whitehaven and West Cumberland Infirmary at Whitehaven, £500 to the Cumberland Infirmary at Carlisle. £500 to the Royal Albert Asylum at Lancaster, and £500 to the Northern Counties' Infirmary, Inverness. Under the same will the Liverpool Eye and Ear Hospital benefits by the sum of £200.—Mr. W. Proctor Baker (Taunton), who has left estate of the value of £160,325, has, after making various legacies, left the residuary estate, subject to payment of an annuity, for the purpose of "building, equipping, maintaining, and endowing a maternity home in connexion with the Bristol General Hospital."

THE ADULTERATION OF MILK.—At the Hampstead petty sessions on Oct. 30th James Pearce, a milkseller of Poulteney-street, Barnsbury, in the employ of the Oak Farm Modern Dairy, was summoned at the instance of the borough council for selling milk containing 2 per cent. of added water on Sept. 10th last. Two sanitary inspectors, who were commended by the bench for their alertness, hid themselves behind a tree near a horse-trough and saw a boy who was in the defendant's company take water from the trough in a two-quart can which the defendant subsequently put into the churn. The inspectors watched the man serve a customer and then took samples from the hand-can employed for this purpose and from the churn; the latter sample contained 2 per cent. of added water. One inspector stated that the water in the horse-trough was polluted and contained scum and froth from horses' mouths; chaff and oats and dead

leaves were also floating on the top, while at the bottom were the usual dirt and sediment. The defendant was fined £5, with the alternative of one month's imprisonment, his offence being, in the opinion of some of the magistrates, the worst of the sort ever brought before them.

EXTENSION OF LEICESTER INFIRMARY: NEW WING OPENED BY H.R.H. PRINCESS LOUISE.—The new south-east wing of the Leicester Infirmary, which has been built and furnished at a cost of £20,000, was formally opened on Tuesday, Nov. 5th, by H.R.H. Princess Louise (Duchess of Argyll). Subsequently Her Royal Highness inaugurated a three days' bazaar on behalf of a nurses' home which it is proposed to build in proximity to the infirmary at a further cost of £20,000. The new wing is a lofty three-storey building separated from the old portion of the infirmary by bridges, cross-ventilated, with an open space between each floor. It provides accommodation for 99 beds, but until the new nurses' home has been built only 66 beds will be available for patients, the remaining 33 on the top floor being in the meantime used for the accommodation of the nurses. The three wards proper provide accommodation for 30 beds, but in the administrative block at the north end of each ward are a two-bedded ward for special cases and a single-bedded ward, together with the necessary bathroom, lavatory, linen-room, sisters' room, patients' clothes-room, storeroom, kitchen, &c. At the south end of the ward are sanitary annexes; on the one side water-closets and nurses' work-room and on the other the lavatory and bathroom. These sanitary annexes are connected to the ward by cross-ventilating lobbies. At the south end of each floor there is a balcony for convalescent patients and for those who can be wheeled upon it in their beds. From this balcony a fire-escape staircase is carried from the ground to the top floor. In addition to this accommodation there is on the west side of the ground ward a verandah running the whole length of the ward and this will be available for cases requiring the "fresh-air" treatment. A feature of the new building is the large electric bed-lift adjoining the connecting bridges and passing from the top floor to the basement. By means of this lift patients may be removed in their beds from one part of the institution to another for operation or other purposes. In the case of the death of a patient in any of the wards the body will be taken by the lift to the basement and thence to the mortuary, thus avoiding passage through rooms open to the observation of patients, visitors, or staff. Built of red brick in the Georgian style the new wing has a quiet and dignified appearance. The floors are of concrete, finished with terrazzo. The latter is laid in squares but curved where it joins the walls, so as to leave no angles for the accumulation of dirt. Each ward is 141 feet 8 inches by 29 feet 6 inches, and this gives a space of 9 feet from centre to centre of each bed. The inside walls are finished with Parian on Portland cement, painted and enamelled. This applies to the walls of the wards, corridors, &c., but the sanitary annexes, ward kitchen, lift, &c., are faced with glazed tiles. The heating and ventilating are an extension of the system introduced at the Leicester Infirmary some years ago—viz., the navacuumette principle, which consists of pumping air from the apparatus and allowing steam to follow the vacuum. By this method a low temperature of steam is maintained throughout the building. The actual heating service is by means of ventilating radiators fixed in suitable positions in the administrative block and with a radiator between each pair of beds below alternate windows in the 30 bed wards. The air inlets to these radiators are so arranged that by means of a door easy facilities are obtained for thoroughly cleansing them. To assist in the ventilating and heating of the large wards two back-to-back heating and ventilating stoves are provided. The air supply to these stoves is brought from the west side of the building and the smoke flues are carried under the floors to chimney stacks on the north side of the ward. In order to keep dirt out of the wards as far as possible facilities are provided for sweeping these flues from the outside. The wing is lighted throughout by electricity, the wards being lighted by means of brackets from the walls in preference to the use of cords which accumulate dirt. In the administrative block gas has been laid on for cooking purposes. A fire main runs through the centre of the administrative block to the wards with a hose attachment in case of fire. An up-to-date telephonic system has also been installed. It should be mentioned that the £20,000, the cost of the new wing, includes £1500 for extending the infirmary laundry, a new ironing room, sorting and distributing room, laundry-maids' room, and office having been provided. The architects both for the new wing and the nurses' home were Messrs. Everard and Pick, Horsefair-street, Leicester. The nurses' home, which it is proposed to commence building in January next, will be to the south-west of the infirmary and will consist of a main building four storeys high. It will provide 100 separate bedrooms and is so planned that every bed- and sitting-room in the building will receive at some time during the day direct sunlight. There will be a covered way from the infirmary buildings to the home.

LITERARY INTELLIGENCE.—Messrs. J. and A. Churchill will publish shortly the three following books:—"The Functional Inertia of Living Matter," by Dr. D. Fraser Harris of the University of St. Andrews. "A Manual of Prescribing," by Dr. C. R. Marshall of the University of Dundee. A revision of "Waring's Bazaar Medicines of India," upon which Lieutenant-Colonel C. P. Lukis, I.M.S., of the University of Calcutta, has been for some time engaged.

UNIVERSITY OF CAMBRIDGE.—The special board for medicine has amended the midwifery certificate for students who commence medical study after Oct. 1st, 1907. The certificate must now testify:—

I. That before attending the prescribed number of cases (indoor or outdoor) the student has acted as clinical clerk and as dresser and has attended courses of lectures in midwifery and surgery;

II. *(a) Indoor cases.* That he has regularly attended for *three months* the indoor practice of a maternity hospital or the maternity wards of a general hospital; and that after he has therein received practical instruction in the conduct of labour, and been approved as competent, he has attended 20 indoor cases of midwifery under the personal supervision of a medical officer of the hospital; or alternatively

II. *(b) Outdoor cases.* That he has daily attended for *one month* the indoor practice of a maternity hospital or the maternity wards of a general hospital or infirmary; and that after he has therein received practical instruction in the conduct of labour, and been approved as competent, he has attended 20 outdoor cases of midwifery under the personal supervision of a medical officer of a hospital, infirmary, maternity charity, or dispensary.

The following examiners have been appointed for the first and second M.B. examinations:—Elementary physics: Mr. C. T. R. Wilson, M.A., Sidney-Sussex College. Elementary chemistry: Mr. R. H. Adie, M.A., Trinity College. Elementary biology: Mr. A. E. Shipley, M.A., Christ's College. Human anatomy: Dr. Duckworth, Jesus College; and Dr. Denyer, Queens' College. Physiology: Mr. J. Bancroft, M.A., King's College; and Dr. D. Noel Paton, B.Sc., of the University of Glasgow. Mr. H. H. Clutton, M.A., M.C., of Clare College, has been appointed an elector to the professorship of surgery. Mr. A. E. Shipley, M.A., of Christ's College, has been appointed a manager of the Frederick James Quick fund.

## BOOKS, ETC., RECEIVED.

DALY AND CO., 37, Essex-street, Strand, London, W.C.
Chats about Wine. By C. E. Hawker. Price 2s. 6d. net.

FROWDE, HENRY, Oxford University Press, London (HODDER AND STOUGHTON, Warwick-square, London, E.C.).
Oxford Medical Publications. Abel's Laboratory Handbook of Bacteriology. Translated from the Tenth German Edition. By M. H. Gordon, M.A., M.D. Oxon., B.Sc. With additions by Dr. A. C. Houston, Dr. T. J. Horder, and the Translator. Price 5s. net.

GOVERNMENT PRINTING OFFICE, Washington.
Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Second Series. Vol. XII. O-Periodicals. Price not stated.

HIRSCHWALD, AUGUST, Unter den Linden, 68, Berlin, N.W.
Die Salzsäuretherapie auf theoretischer und praktischer Grundlage. Bearbeitet von Prof. Dr. Hans Leo in Bonn. Price M.3.20.

HÖLDER, ALFRED, Wien and Leipzig.
Synonymik der Dermatologie. Von Dr. Johannes Fick, Wien. Price M.1.40.

LEWIS, H. K., 136, Gower-street, London, W.C.
Squint and Ocular Paralysis, with a Short Account of the Disturbances of Muscle Balance. By E. Lucas Hughes, M.R.C.S. Eng., L.R.C.P. Lond., Fellow of the Royal Institute of Public Health; Clinical Ophthalmic Assistant, Royal Infirmary, Liverpool. Price 6s. 6d. net.

MARHOLD, CARL, Halle a. S.
Zur Psychologie und Therapie Neurotischer Symptome. Eine Studie auf Grund der Neurosenlehre Freuds. Von Dr. Arthur Muthmann, II. Arzt des Kurhauses Bad Nassau, früherem II. Arzt der psychiatrischen Klinik der Universität Basel. Price M.2.

Die Erkennung und Behandlung der Melancholie in der Praxis. Von Geh. Med.-Rat. Prof. Dr. Th. Ziehen in Berlin. Zweite, durchgesehene und verbesserte Auflage. Price M.2.

METHUEN AND Co., 36, Essex-street, Strand, London, W.C.

The Power of Concentration: How to Acquire it. By Eustace Miles, M.A., author of "Life after Life." Price 3s. 6d. net.

OLIVER AND BOYD, Edinburgh.

The Transactions of the Edinburgh Obstetrical Society. Volume XXXII. Session 1906-1907. Price not stated.

REBMAN, LIMITED, 129, Shaftesbury-avenue, London, W.C.

A Manual of Surgery. For Students and Physicians. By Francis T. Stewart, M.D., Professor of Surgery, Philadelphia Polyclinic; Associate in Surgery, Jefferson Medical College; Surgeon to the Germantown Hospital; Out-patient Surgeon to the Pennsylvania Hospital. Price 15s. net.

REID, ANDREW, AND COMPANY, LIMITED, London and Newcastle-upon-Tyne.

Armstrong College, Newcastle-upon-Tyne. (In the University of Durham.) Calendar. Session 1907-1908. Price 1s.; post free, 1s. 4d.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

DOONAN, J. A. C., M.B., M.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Northwich District of the county of Chester.

LUARD, H. B., M.B., B.C., D.P.H. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Osmotherley District of the county of York.

LUPTON, HARRY, M.R.C.S., L.R.C.P. Lond., has been appointed Consulting Surgeon to the Stratford-on-Avon Hospital.

MACDONALD, GILBERT REGINALD, L.R.C.P., L.R.C.S. Irel., has been appointed Medical Officer for the Fourth District by the Wellington (Somerset) Board of Guardians.

MACLEAN, JAMES MEGAN, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Public Vaccinator at Port Germain, South Australia.

MORTON, WILLIAM JOHN, M.D. Edin., has been appointed Government Medical Officer and Vaccinator at Inverell, New South Wales.

RENTON, J. MILL, M.B., Ch.B. Glasg., has been appointed Extra Dispensary Surgeon to the Western Infirmary, Glasgow.

ROY, J. ALLAN C., M.B., Ch.B. Vict., has been appointed Assistant Medical Officer at the Royal Asylum, Cheadle.

TIDSWELL, FRANK, M.B., Ch.M. Syd., has been appointed President of the Board of Health, New South Wales, during the absence of Dr. J. Ashburton Thompson.

TOBIN, JOSEPH RICHARD, L.R.C.P. & S. Irel., has been appointed Public Vaccinator at Kapunda, South Australia.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

AYR DISTRICT LUNACY BOARD.—Medical Superintendent. Salary £500 with house, fuel, &c.

BARNSTAPLE, NORTH DEVON INFIRMARY.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL, Woodchurch-road, Birkenhead.—House Surgeon. Salary £100, with board, residence, and laundry.

BIRMINGHAM EAR AND THROAT HOSPITAL, Edmund-street.—House Surgeon. Salary at rate of £70 per annum.

CHELSEA INFIRMARY, Cale-street, S.W.—First Assistant Medical Officer. Salary £120, rising to £150 per annum, with board, washing, apartments, &c.

CHELTENHAM GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £70 per annum, with board and apartments.

COLCHESTER, ESSEX AND COLCHESTER GENERAL HOSPITAL.—House Surgeon. Salary £80 per annum, with board, washing, and residence.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, attendance, and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, London, S.E.—House Surgeon, also Assistant House Surgeon, for five months. Salary at rate of £80 and £70 per annum respectively, with board, residence, and washing.

GLASGOW DISTRICT ASYLUM, Woodilee, Lenzie.—Junior Assistant Medical Officer. Salary £125 per annum, with board, lodging, washing, &c.

GLOUCESTER GENERAL INFIRMARY AND GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

HAVERFORDWEST RURAL DISTRICT COUNCIL.—Medical Officer of Health. Salary £150 per annum.

ILKESTON, BOROUGH OF.—Medical Officer (female) to undertake duties, under Inspection of Schools Act, 1906, and Notification of Births Act, 1907.

KENSINGTON GENERAL HOSPITAL, Earl's Court, London, S.W.—Junior Resident Medical Officer. Salary £40 per annum, with board, washing, and residence.

KING EDWARD VII. SANATORIUM, Midhurst, Sussex.—Pathologist, unmarried. Salary £250 per annum, with board, lodging, and attendance.

LIVERPOOL WORKHOUSE, Brownlow Hill.—Assistant Medical Officer. Salary £100 per annum, with board, residence, &c.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60, with board and lodging.

MILLER HOSPITAL, Greenwich-road, S.E.—House Surgeon for six months. Salary at rate of £80 per annum, with board, attendance, and washing.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury.—Honorary Dental Surgeon.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary £160, rising to £180 per annum.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Assistant Physician.

NORWICH, JENNY LIND INFIRMARY FOR CHILDREN, Unthank-road.—Resident Medical Officer (female). Salary £50 per annum, with board, residence, and laundry.

OLDHAM INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board, residence and washing.

PECKHAM HOUSE ASYLUM, London, S.E.—Assistant Medical Officer. Salary £150.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone road, N.W.—Resident Medical Officer for Out-patient Department for four months. Salary at rate of £60 per annum, with board, residence, and washing.

ROXBURGH DISTRICT ASYLUM, Melrose.—Assistant Medical Officer. Salary £150 per annum, with board, rooms, and washing.

ST. GEORGE'S HOSPITAL, S.W.—Senior Radiographer. Salary £100 per annum.

ST. GILES, CAMBERWELL, INFIRMARY AND WORKHOUSE.—Assistant Medical Officer. Salary £140 per annum, with apartments, board, and washing.

ST. MARY'S HOSPITAL, Paddington, W.—Resident Assistant Anæsthetist for six months. Salary at rate of £100 per annum, with board and residence.

SHEFFIELD ROYAL INFIRMARY.—Senior Assistant House Surgeon, also Junior Assistant House Surgeon. Salary of former £70 and of latter £65 per annum, with board and residence.

SHEFFIELD UNION HOSPITAL AND WORKHOUSE, Fir Vale.—Resident Assistant Medical Officer. Salary £100 per annum, with apartments, rations, &c.

SOUTHAMPTON FREE EYE HOSPITAL.—House Surgeon. Salary £70 per annum, with board and residence.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill.—Junior House Surgeon. Salary £50 per annum, with board, apartments, and washing.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician for six months. Salary £30, with board and lodging.

WARRINGTON INFIRMARY AND DISPENSARY.—Senior House Surgeon, unmarried. Salary £120 per annum, with residence and board.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, &c., 73, Welbeck-street, W.—Resident Medical Officer for six months, renewable. Salary at rate of 50 guineas per annum, with residence, board, washing, and attendance. Also In-patients' Physician.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician for six months. Board, lodging, and laundry provided.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Cleobury Mortimer, in the county of Salop.

# Births, Marriages, and Deaths.

## BIRTHS.

REIDY.—On Oct. 30th, at 314, Commercial-road, E., the wife of J. Reidy, L.R.C.P. & S.E., of a son.

RYLEY.—On Oct. 30th, at the Peak, Hong-Kong, the wife of Charles Ryley, R.A.M.C., of a son.

VERDON.—On Oct. 24th, at The Pines, Streatham-hill, the wife of Dr. Egbert Sumner Verdon, of Fez, Physician to H.S.M. the Sultan of Morocco, of a daughter.

## MARRIAGE

DAVIS—JOHNSON.—On Oct. 31st, at Holy Trinity, Bridlington, Harry Davis, L.D.S. R.C.S. Eng. to Ada Beatrice, second daughter of Mr. W. T. Johnson, of Bridlington.

## DEATHS.

BENHAM.—On Nov. 3rd, at 11, Earl's Court-square, S.W., after a long and painful illness, Robert Fitzroy Benham, M.R.C.S. Eng., Founder of, and Honorary Consulting Surgeon to, the Kensington General Hospital, aged 54. Very deeply mourned by his relatives, friends, and patients. Interment at Kensal Green Cemetery on Saturday, 9th, at 1.45.

BRAMELD.—On Nov. 4th, at Saltburn-by-the-Sea, in his 89th year, Henry Edward Brameld, M.D., J.P.

PAUL.—On Nov. 1st, from a gun accident, Vining Paul, M.R.C.S., M.R.C.P.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## PROFESSIONAL GRATITUDE.

THERE dwells in Bombay a medical man, an L.M. & S. of the university of that city, who takes an altogether too liberal view of the claims of gratitude which his patients have upon him. He does not feel satisfied with personally assuring them of his sensibility of their friendly support but has let his feelings on the subject overflow into the columns of a native paper published in the Gujarati dialect, his effusion curiously enough being headed by a portrait of himself with a stethoscope prominently displayed. We are indebted to a correspondent for a translation of this precious thanksgiving of which we have space to give only a few extracts.

Dr. —— hereby thanks his thousands of patients for the good feeling they showed and the blessings they poured on him during his last illness of typhoid fever.

(Here follow details of the enormous amount of work which brought this illness on him.)

I hereby thank all those of my patients in Bombay as well as in other countries who at that time expressed their good wishes and blessed me.

* * * * *

At the same time, during the typhoid illness, a very sad and imaginary rumour that my death had taken place, first propagated by some enemy of mine, spread very rapidly all over India, so that many people from Bombay, as well as outside, owing to the good feelings they had toward me, came to my place to learn the truth, and hearing that the rumour was false, returned, showing their scorn for the spreader of the false rumour and blessing me. And Parsees, as well as people of other communities, had ceremonies performed for my recovery.

Gratitude is an excellent virtue but we wonder what this gentlemen's professional colleagues of Bombay are thinking about this advertisement.

## THE CLEANLY EAST.

*To the Editors of* THE LANCET.

SIRS,—I have often wondered why the eastern custom of ablution after stool has not been generally adopted by Europeans in place of the use of toilet paper, which is not only inefficient for cleansing but frequently aggravates, if it does not cause, hæmorrhoids, pruritus, and other anal affections. I understand that pans for export to Indian hospitals are manufactured in this country with a receptacle at the back which is automatically flushed and provides clean water for laving; but a better plan would be to construct the pedestal with an arrangement by which a stream of tepid or cold water could be projected on the parts. It should be worth the while of some sanitary engineering firm to design and supply this. A makeshift, which answers sufficiently well, can, however, be fitted up in a few minutes by inserting one end of a small lead pipe syphon in the flushing tank overhead and attaching to the other end about 3 feet of rubber tube with a vulcanite nozzle and tap. The tube can be hung over a hook or in the wall when not in use.

I am, Sirs, yours faithfully,

Upper Norwood, S.E., Nov. 5th, 1907. JOHN A. COCKBURN.

## FIRE AT THE LONDON HOSPITAL.

THE value of private fire appliances was amply evidenced at an out break which recently occurred at the London Hospital. The staff of the institution got to work with one of the hydrants on the premises and the fire was speedily extinguished, being confined to the laundry, where it originated. For many years a system of fire-drill was carried out at the London Hospital and the practical training thus imparted probably bore good fruit in a serious emergency.

## THE ACTION OF PRIVET POLLEN.

*To the Editors of* THE LANCET.

SIRS,—I have been lately questioned as to the probability of the malign influence of the privet shrub (Ligustrum vulgare) on patients subject to pulmonary tuberculosis, the supposition being that the cough is aggravated by the pollen. I am sceptical on the subject myself as far as any specific action is concerned, but I would be much obliged for any information from your readers.

I am, Sirs, yours faithfully,

Nov. 4th, 1907. M.R.C.S.

## A NEW TEMPERATURE CHART.

THE Scientific Press, Limited, has submitted to us a temperature chart designed by Dr. S. M. Hebblethwaite. The division of the chart into days is left to the recorder, who is also directed to chart the temperature in ink, the pulse in red pencil, and the respirations in blue, the scales for these observations being printed in three vertical rows at the side of the chart. There is a very small blank left for notes at the bottom of the sheet. The records are to be made by lines only, no dots being used, an injunction rendered necessary by the complicated crossings of the three curves. How to keep a chart must be a matter of personal taste to a great extent, and what one person finds convenient another will find troublesome. We may be sure that Dr. Hebblethwaite has had favourable experiences of his form of chart but we should have guessed that the innovation would have no great advantage. It is much easier to chart by the dot method. If it be desired to chart the pulse and respiration we should prefer a small supplementary sheet for the temperature.

## A MECHANICAL VIBRATION APPARATUS.

WE have received from the British Medical Appliance Manufacturing Company a hand-driven massaging machine or "vibrator" intended for application on any part of the body. Medical men accustomed to use vibration as a therapeutic agent will find that it may be efficiently produced by this machine; indeed, when applied to the thorax or abdomen it produces a surprisingly deep sensation of vibration which might conceivably be useful in the treatment of atonic constipation. The effect on the limbs resembles that of a coil current and the inventors claim that it strikes from 3000 to 6000 blows to the minute. It is well made and portable, weighing 2 pounds. We observe that the circular accompanying the instrument states that it sells for two guineas, which, we think, is excessive.

## NEW BED-LIFT AND CARRIER.

WE have received from Mr. Edmund Dean, a member of the committee of the Croydon General Hospital, a description of a bed-lift and carrier constructed after his design for the use of the Croydon General Hospital. The apparatus is now manufactured by the Hospitals and General Contracts Company, Limited, 33 and 35, Mortimer-street, W., and the price is £25, with a reduction to hospitals. We have inspected the apparatus and consider that it should prove very serviceable. It consists of an oblong frame of tubular steel mounted on three ten-inch rubber-tyred castors. The frame is slipped under the bedstead and then by turning a handle, which works on geared shafts, the screws at each corner of the parallelogram lift up rods carrying crossbars which engage with the head and foot of the bed. The mechanical advantage is so great that as we proved by personal trial, when the lifting rods come into touch with the bed hardly any increase in resistance is felt. Altogether we think the apparatus will be found of great use.

## THE USE OF THE SETON.

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of Oct. 26th, p. 1167, there is figured a new seton knife. As I have not seen the use of either seton or issue for a good many years I have frequently wondered whether these means of keeping up counter irritation are giving way to better methods. Personally I have thought that the seton would be preferable to open blister used in cases of chronic rheumatic arthritis as supported by Dr. Latham. Any information on this matter would, I am sure, be welcome to many of your readers.

I am, Sirs, yours faithfully,

Nov. 4th, 1907. HIRUDO.

## THE BURLINGTON ART MINIATURES.

WE have received a little box made to resemble a book and containing ten "mezzogravures" of pictures in the King's collection. This is the first of a series which are to be issued fortnightly at a very low cost by the Fine Arts Publishing Co., illustrating the principal galleries in Europe. We mention them as they would afford a welcome relief to the time-honoured periodicals that frequently adorn a medical man's waiting-room table. The publishers would improve the box of pictures by inserting a ribbon under the prints in order to lift them out readily.

## A MEDIÆVAL SURVIVAL.

THE predatory baron is a picturesque figure in many of the romances purporting to deal with the fourteenth and fifteenth centuries, but we have always felt that gallant though his exploits may have been he must have been a terrible nuisance to his neighbours. He was, however, of his date, while the gist of this note is to call attention to an anachronism now among us. Baron B. von Hohnfeldt, M.D., who was mess-trooping in London during the past week, cannot plead the behaviour of contemporary barons as an excuse. He called here, at least an individual giving that name called here, and asked for literary work, when he took occasion to borrow a trifle. After his departure we learned that the gentleman who sent him to us had himself been persuaded "to stand and deliver"; since which time another physician has written to us stating that he has been honoured with a call from the baron and an invitation to contribute to his broken resources on the ground that "he was known to THE LANCET." We therefore take the earliest opportunity of pointing out that we do not know this unfortunate nobleman, and we suggest that our readers should think twice before giving him any money.

## WANTED—A HOME.

A CORRESPONDENT writes:—"Could any of your readers tell me of a suitable home, for a time, for a medical man, 35 years of age, suffering from neurasthenia, but mentally sound, cheerful, and perfectly capable of light employment? Having come to an end of his savings, he has nothing to offer but his daily labour. Immediate replies will be gratefully received by 'Medicus,' 66, Alma-road, St. Albans."

*C. C.*—Barbers are only one class among many who usurp minor medical functions. If the suggested further particulars are sent we may be able to notice the matter.

*Puzzled.*—If our correspondent will send a bottle of the nostrum to us we will see whether our Analytical Department can shed a light upon its contents.

*H. B., M.A., &c.*—Our correspondent will, we are sure, join with us in a feeling of satisfaction that the matter has been amicably settled.

*L.* asks us to state that he is grateful to those correspondents who kindly replied to his queries regarding the falsetto voice.

ERRATUM.—A typographical error occurred in an analytical notice of a sample of sterilised milk published in THE LANCET of July 27th, 1907, p. 233. The figure for fat should be 4·05 per cent. and not 5·05 per cent. The other figures are correct but the total should read 13·12 per cent. which is 1 per cent. over the average.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY** (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (2 P.M.), St. Mark's (2.30 P.M.).

**TUESDAY** (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

**WEDNESDAY** (13th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30). P.M.

**THURSDAY** (14th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynæcological, 2.30 P.M.).

**FRIDAY** (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

**SATURDAY** (16th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## SOCIETIES.

**MONDAY** (11th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8 P.M.: Clinical Evening. Cases will be exhibited by Dr. J. A. Ormerod, Dr. G. F. Still, Dr. T. D. Savill, Dr. S. E. Dore, Dr. F. J. Poynton, Dr. A. F. Voelcker, Dr. F. S. Palmer, Mr. G. Watson, and others.

**TUESDAY** (12th).—PHARMACEUTICAL SOCIETY OF GREAT BRITAIN (17, Bloomsbury-square, W.C.).—8 P.M.: Discussion on the British Pharmaceutical Codex (opened by Mr. C. A. Hill and Mr. R. H. Parker).

ROYAL SOCIETY OF MEDICINE (SURGICAL SECTION) (20, Hanover-square, W.).—5.30 P.M.: Paper:—Mr. J. Berry: On the Analysis of 274 Additional Cases of Removal of Goitre by Operation.

CHILD-STUDY SOCIETY (Parkes Museum, Margaret-street, W.).—8 P.M.: Lecture:—Mrs. Scharlieb: Physical Training of Adolescent Girls.

**THURSDAY** (14th).—ROYAL SOCIETY OF MEDICINE (OBSTETRICAL AND GYNÆCOLOGICAL SECTION) (20, Hanover-square, W.).—7.45 P.M.: Specimens will be shown by the President (Dr. H. Spencer), Mr. A. Doran, Dr. Fairbairn, Dr. Macnaughton-Jones, and Dr. C. H. Roberts. Paper:—Dr. T. Wilson: Publotomy (with illustrative cases).

UNITED SERVICES MEDICAL SOCIETY (Royal Army Medical College, Millbank, S.W.).—8.30 P.M.: Paper:—Major W. S. Harrison, R.A.M.C.: Enteric Fever in War.

**FRIDAY** (15th).—SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (11, Chandos-street, Cavendish square, W.).—4.30 P.M.: Cases will be shown by Dr. Clutterbuck, Dr. G. Carpenter, Dr. F. J. Poynton, Mr. J. R. Howard, Mr. R. Warren, and others. Paper:—Dr. G. H. Lock: Case of Rheumatic Hyperpyrexia in a Child aged Six Years.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY** (11th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—12 noon: Lecture:—Dr. Low: Pathological Demonstration. 2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations. 5 P.M.: Clinical Lecture:—Dr. Saunders.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. S. E. Dore: Clinique. (Skin.) 5.15 P.M.: Lecture:—Mr. M. Gunn: The Eyesight in Old Age.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—10 A.M.: Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Medical Out-patient (Dr. T. R. Whipham); Throat, Nose, and Ear (Mr. H. W. Carson); X Ray (Dr. A. H. Pirie); 4.30 P.M.: Medical In-patient (Dr. A. J. Whiting).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Sir Dyce Duckworth: Medicine. 2.30 P.M.: Operations. 3.15 P.M.: Mr. W. Turner: Surgery. 4 P.M.: Dr. StClair Thomson: Ear and Throat. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat.

GREAT NORTHERN CENTRAL HOSPITAL (Holloway-road, N.).—9 A.M.: Operations. 2.30 P.M.: In-patients—Medical (Dr. Beevor); Out-patients—Medical (Dr. Willcox), Surgical (Mr. Low), Eye (Mr. Morton and Mr. Coates).

HOSPITAL FOR DISEASES OF THE SKIN (52, Stamford-street, Blackfriars, S.E.).—5 P.M.: Lecture:—Mr. T. J. P. Hartigan: Psoriasis, Lichen Planus.

ROYAL DENTAL HOSPITAL AND LONDON SCHOOL OF DENTAL SURGERY (Leicester-square, W.C.).—5.30 P.M.: Mr. J. H. Mummery: Recent Views on Immunity in Relation to Dental Disease.

**TUESDAY** (12th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—10 A.M.: Dr. M. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Lecture:—Mr. Pardoe: Treatment of Vesical Calculus.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. E. Cautley: Clinique. (Medical.) 5.15 P.M.: Lecture:—Dr. N. Raw (Liverpool): Human and Bovine Tuberculosis, with Special Reference to Treatment.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Clinique:—10.30 A.M.: Medical Out-patient (Dr. A. G. Auld). 2.30 P.M.: Surgical Operations (Mr. Carson). Cliniques:—Surgical Out-patient (Mr. Edmunds); Gynæcological (Dr. A. E. Giles).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. R. T. Hewlett: Medicine. 2.30 P.M.: Operations. 3.15 P.M.: Mr. Carless: Surgery. 4 P.M.: Mr. M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Skin. 3.15 P.M.: Special Lecture:—Mr. Carless: Some Internal Derangements of the Knee Joint.

GREAT NORTHERN CENTRAL HOSPITAL (Holloway-road, N.).—2.30 P.M.: In-patients—Medical (Dr. Beale), Throat and Ear (Mr. Waggett); Out-patients—Surgical (Mr. Edmunds), Throat and Ear (Mr. French); Operations (Mr. Beale).

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—3.45 P.M.: Demonstration:—Dr. Atkinson: External Ear.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture:—Sir W. Gowers.

INCORPORATED INSTITUTE OF HYGIENE (34, Devonshire-street, Harley-street, W.).—3.30 P.M.: Lecture:—Dr. A. T. Schofield: The Influence of the Mind on Health.

**WEDNESDAY** (13th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. K. Scott: Diseases of Eye. 2.30 P.M.: Operations. Dr. Robinson: Diseases of Women. 5 P.M.: Lecture:—Dr. Beddard: Practical Medicine.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. M. White: Clinique. (Surgical.) 5.15 P.M.: Lecture: Mr. D. Armour: Head Injuries.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—2.30 P.M.: Medical Out-patient (Dr. Whipham); Dermatological (Dr. G. N. Meachen); Ophthalmological (Mr. R. P. Brooks). 4.30 P.M.: Demonstration:—Mr. Brooks: Selected Eye Cases.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. F. Taylor: Medicine. 2.30 P.M.: Operations. 3.30 P.M.: Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

GREAT NORTHERN CENTRAL HOSPITAL (Holloway-road, N.).—2.30 P.M.: In-patients—Surgical (Mr. Stabb); Out-patients—Medical (Dr. Horder), Gynæcological (Dr. Lockyer), Skin (Dr. Whitfield), Teeth (Mr. Baly); Operations (Mr. Stabb).

HOSPITAL FOR DISEASES OF THE SKIN (52, Stamford-street, Blackfriars, S.E.).—5 P.M.: Lecture:—Mr. T. J. P. Hartigan: Keratosis, Follicularis, Lichen Pilaris, Ichthyosis.

**THURSDAY** (14th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations. 5 P.M.: Clinical Lecture:—Mr. Keetley: Common Injuries and Diseases of the Foot.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Lecture:—Mr. F. B. Jessett: Carcinoma of the Uterus, the Importance of Early Diagnosis; Symptoms and Treatment.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—2.30 P.M.: Gynæcological Operations (Dr. Giles). Cliniques:—Medical Out-patient (Dr. Whiting); Surgical Out-patient (Mr. Carson); X Ray (Dr. Pirie). 3 P.M.: Medical In-patient (Dr. G. P. Chappel). 5 P.M.: Demonstration at the Mount Vernon Hospital, Hampstead, N.W.:—Dr. J. E. Squire: Selected Chest Cases

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. G. Rankin: Medicine. 2.30 P.M.: Operations. 3.15 P.M.: Sir W. Bennett: Surgery. 4 P.M.: Mr. M. Davidson: Radiography. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat. 2.15 P.M.: Special Lecture:—Dr. G. Rankin: Infantile Paralysis.

GREAT NORTHERN CENTRAL HOSPITAL (Holloway-road, N.).—2.30 P.M.: In-patients—Medical (Dr. Morison).

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—6 P.M.: Chesterfield Lecture:—Dr. M. Dockrell: Tuberculosis of the Skin: I., Lupus Vulgaris; II., Tuberculosis Verrucosa Cutis; III., Scrofuloderma.

CHARING CROSS HOSPITAL.—3 P.M.: Demonstration:—Dr. Galloway and Dr. MacLeod: Diseases of the Skin. 4 P.M.: Demonstration:—Mr. Gibbs: Surgical. (Post-Graduate Course.)

HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M.: Lecture:—Dr. Colman: Splenic Enlargement.

HOSPITAL FOR NERVOUS DISEASES (Welbeck-street, W.).—5 P.M.: Lecture:—Dr. D. Grant: Some Forms of Nerve Deafness.

**FRIDAY** (15th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. M. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Lecture:—Dr. R. H. Cole: Recent Researches in the Pathology of General Paralysis.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. J. Horne: Clinique. (Throat.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—10 A.M.: Clinique:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Surgical Operations (Mr. Edmunds). Cliniques:—Medical Out-patient (Dr. Auld); Eye (Mr. Brooks). 3 P.M.: Medical In-patient (Dr. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. R. Bradford: Medicine. 2.30 P.M.: Operations. 3.15 P.M.: Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Skin.

GREAT NORTHERN CENTRAL HOSPITAL (Holloway-road, N.).—3 P.M.: Clinical Lecture:—Mr. G. Coats: Some Points in the Diagnosis and Treatment of Conjunctivitis.

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—3.45 P.M.: Demonstration:—Dr. D. McKenzie: Thyroid and Cervical Region.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture:—Dr. R. Russell: Tumours of the Spinal Cord.

**SATURDAY** (16th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. K. Scott: Diseases of Eye. 2.30 P.M.: Operations. Dr. Robinson: Diseases of Women.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich.)—2.30 P.M.: Operations. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

HOSPITAL FOR DISEASES OF THE SKIN (52, Stamford-street, Blackfriars, S.E.).—5 P.M.: Lecture:—Mr. T. J. P. Hartigan: Verruca Vulgaris, Cornu Cutaneum, Clavus Angiokeratoma, Condyloma Acuminatum.

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*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, Nov. 7th, 1907.

| Date. | | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radiation in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|
| Nov. | 1 | 29·98 | N.E. | ... | 63 | 55 | 40 | 41 | 41 | Foggy |
| ,, | 2 | 29 72 | E. | ... | 76 | 57 | 40 | 51 | 53 | Overcast |
| ,, | 3 | 29 58 | E. | ... | 57 | 56 | 50 | 48 | 50 | Cloudy |
| ,, | 4 | 29 88 | E. | ... | 60 | 55 | 50 | 52 | 52 | Overcast |
| ,, | 5 | 30·03 | N.E. | ... | 76 | 55 | 49 | 49 | 50 | Fine |
| ,, | 6 | 30·19 | N.E. | ... | 67 | 54 | 46 | 46 | 47 | Overcast |
| ,, | 7 | 30 09 | N.E. | ... | 52 | 50 | 47 | 47 | 48 | Overcast |

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